

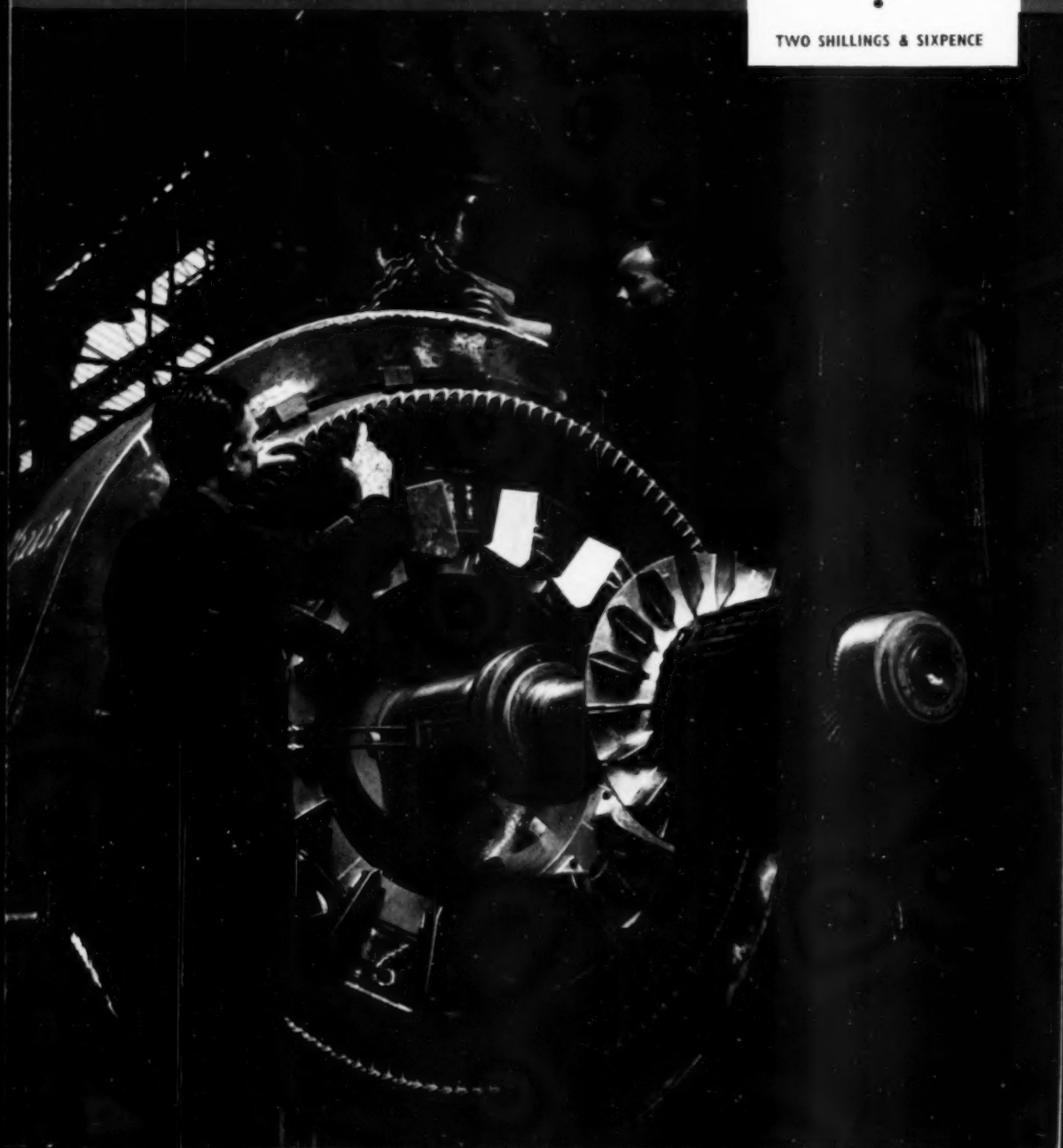
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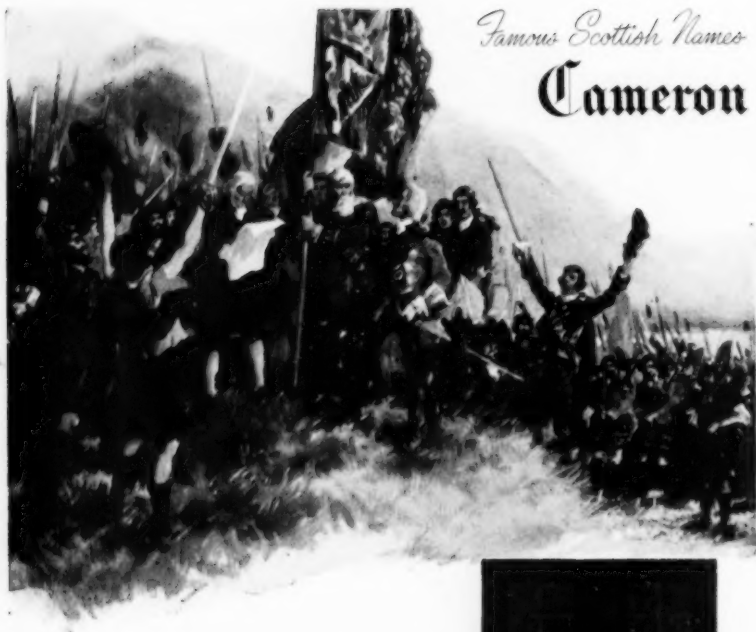
Business

THE JOURNAL OF MANAGEMENT IN INDUSTRY

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OCTOBER, 1963

Business

THE JOURNAL OF MANAGEMENT IN INDUSTRY

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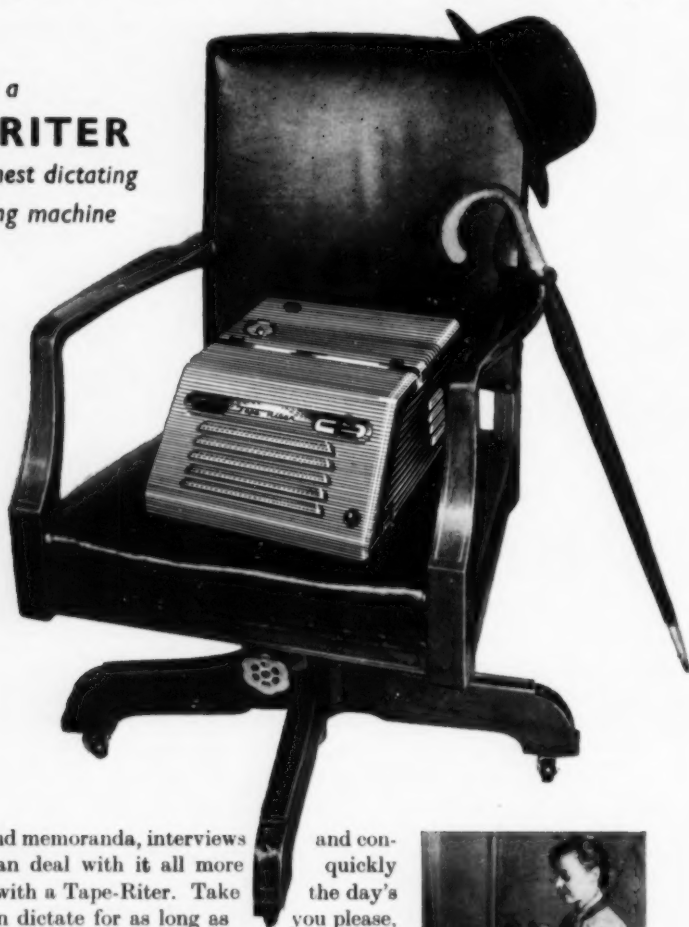
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With this problem, Liptons invited Burroughs' collaboration in an experiment, asking one of their machine-accounting specialists to demonstrate a Burroughs Itemizing Cash Registering Machine in action. The speed at which one girl could use the machine to register purchases, give tickets and change, was timed.



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Result: So satisfactorily did this Burroughs Machine work under pressure, that Lipton Ltd. installed one straight away (later two more) in their Leeds shop. The increased speed it has brought to transactions

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For expert advice on business figuring call in

Burroughs



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bringing you

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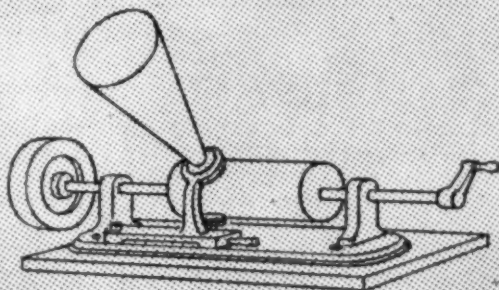
better  living

The ENGLISH ELECTRIC Company Limited, Queens House, Kingsway, London, W.C.2

in 1877

THOMAS ALVA EDISON

amazed the world by
recording the human voice



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more economical method of
handling Memos—Reports—
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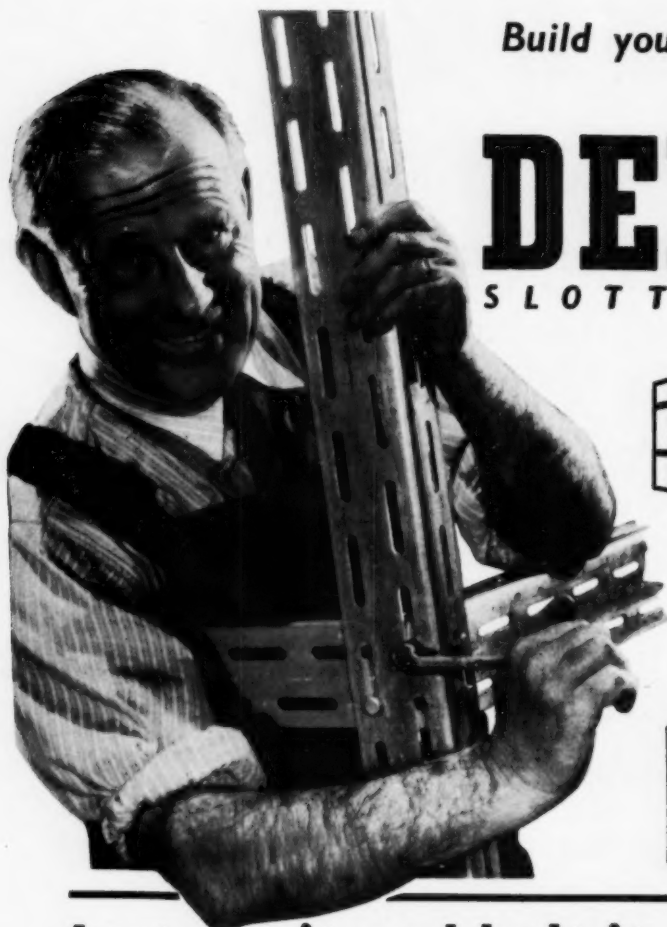
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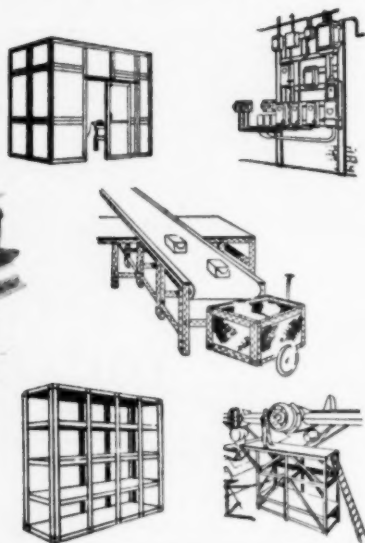
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with

DEXION

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Just cut it and bolt it, that's all!

No drawings required - rough sketches are good enough

No drilling, welding, measuring or painting. No scrap

Now available in both steel & aluminium alloy.

★ Write or telephone for illustrated booklet G5

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With game to both sides your partner deals and bids one spade, the opponent on your right bidding two clubs. What do you bid on



Let the backs of these cards advertise your products



WHY YOU SHOULD ADOPT THIS MOST SUCCESSFUL ADVERTISING MEDIUM

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There is no other medium which gives such continuous publicity value and at such a low cost as Advertising Playing Cards. The advertisement is seen by players and onlookers alike 52 times each deal, and in leisureed hours when the mind is most receptive to your message.

52 UNPAID SALESMEN

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There is no restriction, and the advertisement can take any form to suit your particular requirements.

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You can definitely direct the distribution to suit your own particular channels, and the cost of distribution is practically nil.

HOW DID YOU BID?

You should double. The opponent on your left would appear to hold practically nothing of value, therefore your king of hearts and ace-queen of diamonds should make three tricks and your four clubs will embarrass the enemy.

WADDINGTON'S

makers of the world's best playing cards

SAMPLES, PARTICULARS, ETC., FROM JOHN WADDINGTON LTD., WAKEFIELD ROAD, LEEDS. 10.



*"The name
Gentlemen is ...*

'Dapag'

The Specialists for **LABELS, TICKETS & TAGS**

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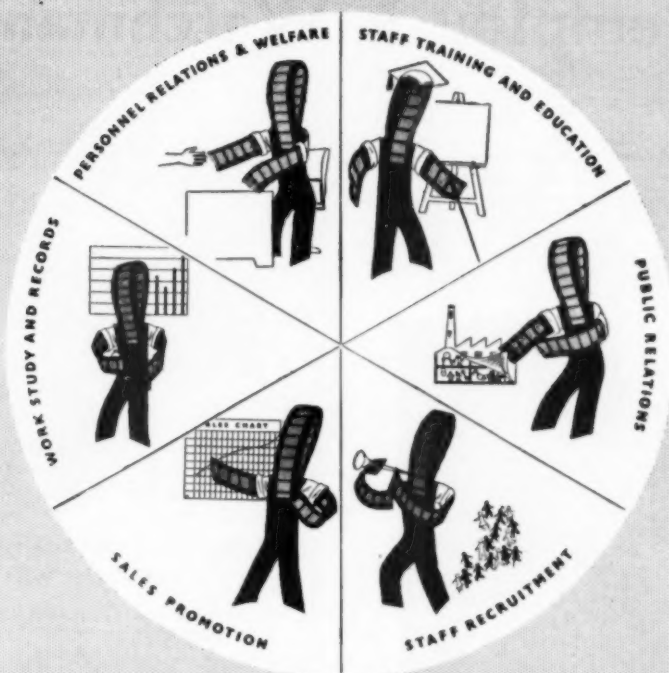
**THE ROLL
IN STRIPS
OR SINGLE**



Yet another executive has discovered that Dapag provide the complete answer to all label, ticket and tag requirements. Nearly every industry uses labels, tickets and tags—and Dapag serves them all.

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The 1953 Expedition carried 2 Bell & Howell 70DL and 4 G.B.-Bell & Howell 603 16 mm. cine-cameras—all with TAYLOR-HOBSON lenses and colour filters, fitted as standard equipment—to capture the record of this magnificent achievement.



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Whatever your programme, Film will make it more productive. Film, in these times of growing competition, is an ally to enlist without delay. For full, authentic information, consult the Industrial Service Division of G.B. Equipments Ltd., whose function it is to advise on every application of Cine Equipment and Visual Aids in modern Industry. This comprehensive service is offered without the smallest obligation on your part: please telephone or write today.

G. B. EQUIPMENTS LTD.

Distributors of the world-famous

G. B.-BELL & HOWELL CINE EQUIPMENT



Industrial Service Division, Dept. B/10/53, Mortimer House,
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You owe it to yourself to see that the £300 a year, or more, he costs you is not wasted.

In 1951 the number of cases of shop-breaking, which includes factory and warehouse breaking, reached 45,000. But no organisation operating the Blick Watchman's Control System as laid down has yet been broken into—because the BLICK System was designed in the knowledge of how the modern burglar works.



The BLICK Watchman's Control System is not just an eight-day clock and a series of keys and boxes installed at strategic points in your premises.

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It is not just that the special spring-loaded keys prevent falsification of the records or that there are no messy carbons or ink ribbons to change.

The secret of its superiority really lies in the form of the record and in the special Record Book. It is these that enable you to outwit the modern burglar. The small sections of a week's records illustrated in the next column explain how this is done.

Why not write today for our free booklet, it explains this modern, simple, effective System in detail.

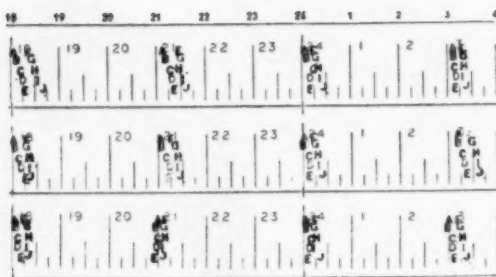
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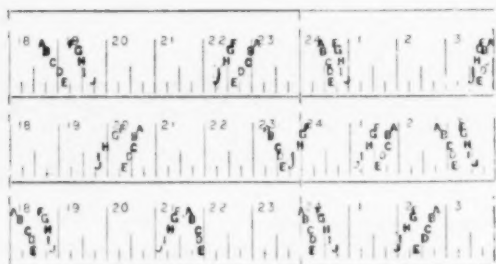
THE WRONG WAY



This record shows—at a glance—that your Watchman is making all the mistakes Watchmen nearly always do make. He is making his rounds at the same time each night and by the same routes—and he tends to go round too quickly.

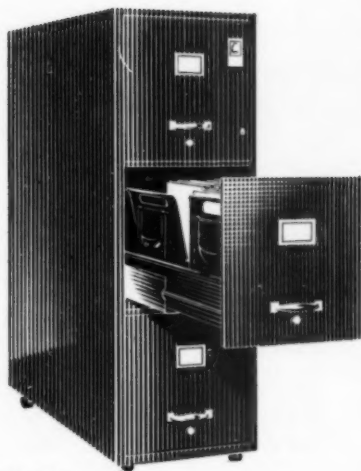
But it is very simple to train him to make his patrols in . . .

THE RIGHT WAY



The record now shows—at a glance—that your Watchman is making his patrols at different times and by different routes and that he is going round at the correct speed—that of a policeman on his beat.

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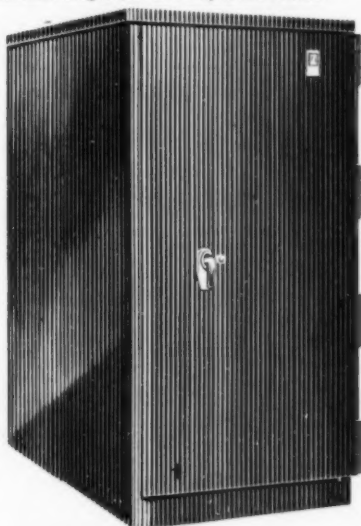


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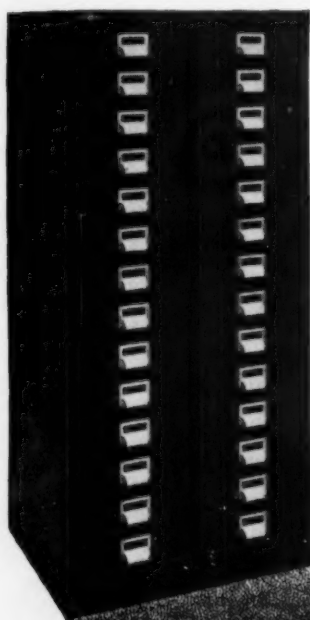
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NO FATIGUE

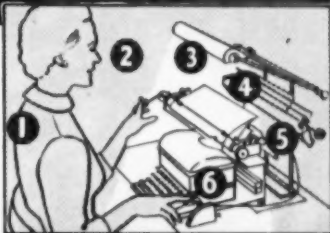
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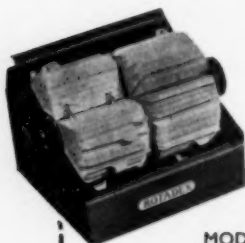
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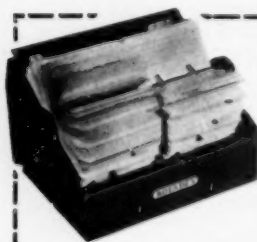
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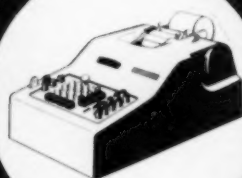
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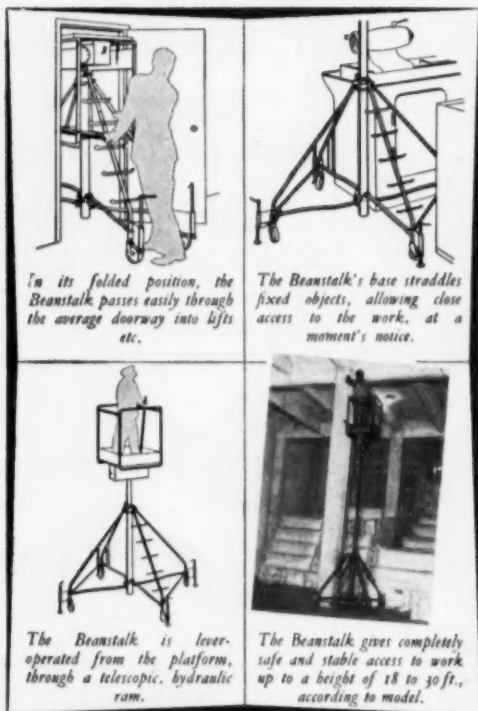


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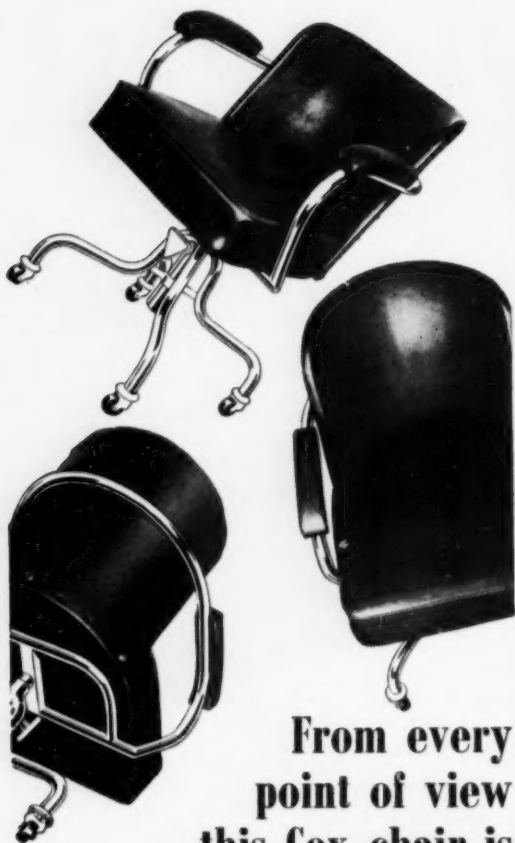


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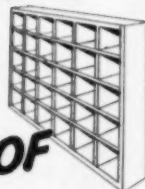


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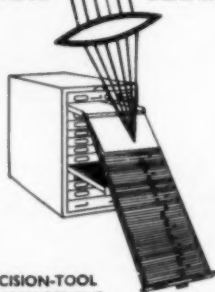
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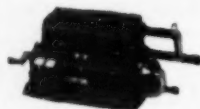
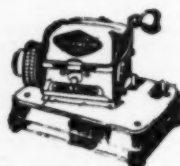
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or hobble?



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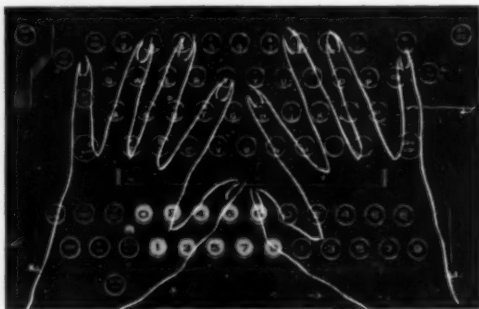
***This incomparable Burroughs machine handles
complete routines—faster, and at less cost***

WHATEVER JOB THE OFFICE HAS ON HAND — stores records, cost accounting, payroll — the work normally divides itself into three distinct operations: calculating, posting or preparing, and checking.

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PROSPECT

survey and forecast of business conditions

SALES ARE STILL EXPANDING

London, September 21, 1953

THE MONTH'S HIGHLIGHTS AND TRENDS

● The boom in trade is becoming almost monotonous. Latest figures show no signs of slackening in expansion. July retail turnover of non-food goods was 5 per cent up on the previous July, wholesale sales of textiles 8 per cent. New instalment credit business opened in July was the highest for any month since before the war; contracts covered not only furniture and consumer goods, but include new and secondhand cars, motor-cycles, agricultural tractors, boats, caravans and industrial machinery. Noteworthy: sharp rise in hire-purchase of secondhand goods.

● Radio and TV sales in July were a whacking 25 per cent up on the previous July, and the Radio Show brought a further flood of orders. Most manufacturers sold their output for many months ahead. Other portents:—

1—Sweet and chocolate sales keep up, are still running at about 8 oz. a head a week. "So far as we know," says the president of the Cocoa, Chocolate and Confectionery Alliance, "no country has ever sustained a consumption per head at this level for so many months".

2—Passenger fare receipts by British Railways for the four weeks to August 9 were up by £4m. on the same period in 1952—an increase only partly accounted for by higher fares.

3—Entertainment tax receipts were up in the second quarter—reversing a trend lasting for some years.

● Note official returns for co-op. trading. From 1937 to 1952, co-op membership rose from 7,746,000 to 10,887,000, sales from £232m. to £702m., and share capital from £142m. to £224m. But average "dividend" dropped from 1s. 10½d. to 1s. 0d. in the £, and average interest paid on shares from 3.5 to 2.7 per cent per annum.

● Report of the 1950 Census of Distribution (see PROSPECT, page x) is "must" reading for all sales managers.

● Manufacturers are making hay while the sun shines. Output is up all round. July estimate for the index of industrial production at 112-113 is not only well above the 102 of last July; it is well ahead of the 111 of July, 1951. Later figures confirm the trend. August steel output was again a record. And July car production—at the rate of nearly five a minute—broke all previous records.

● Coal output still lags. But fears of a coal crisis seem to be waning. Efforts to economize coal seem to be bearing fruit. With production in the first half of 1953 at the same level as in 1951, inland coal consumption was 4m. tons less. Production per ton of coal used has risen. And prospects for imports of Continental coal are good.

● Long-term figures of production are reassuring. National Income and Expenditure Survey shows that goods and services produced rose from 1946 to 1952

continued on following page

THE MONTH'S HIGHLIGHTS AND TRENDS (continued)

by £1,500m., or 15 per cent at 1948 prices. Increase was shared evenly among all trades.

- Most startling figure from the Survey : personal savings rose by about £300m. from 1946 to 1952. Britons are no longer living on capital.

- Unemployment in July dropped off the bottom of BUSINESS's chart—reaching the lowest figure since 1951. Total : 272,676, or only 1.3 per cent of working population. And of these, only 126,000 had been out of work more than 8 weeks. Improvement was general—even Wales, Scotland and Northern Ireland showed lower figures.

- Wages are still rising. Weekly wage bill in July rose by £207,000—largest amount since February. Expect more to come. Electricians, engineers, miners and railway workers are all pressing for increases ; are likely to get them.

- Look for tax relief on contributions to provide retirement pensions through life assurance policies. Government report is expected shortly. But it is not likely that these will be immediate. New scheme—anticipated pension policy—can be bought now at low annual cost, with option to complete at a higher rate, irrespective of state of health, when the expected tax reliefs are available.

- Raw material prices are still falling. July Board of Trade indices were the lowest for three years. Main cause : fall in copper price. Significant trend : first sign of a substantial fall in food prices.

- Note new indices now available : rubber goods (other than tyres), toilet preparations, spectacles, pens and pencils and stationers' miscellaneous goods.

- Recent fall in sterling was largely seasonal. Price has now recovered to over parity of \$2.80. Firmness seems well founded. August rise in gold and dollar reserves was better than it looked—surplus with \$ world was £14m., after paying off \$39m. on the 1942 Canadian loan.

- Convertibility question still hangs fire—waiting for the Americans to "wait and see". Government is getting worried. "We cannot wait", says Mr. Butler. But the Americans are apparently unmoved. There seems little likelihood now of any substantial backing for sterling fund from the U.S.A. Next step must await the Australian Commonwealth conference.

- G.A.T.T. conference may spark off explosions. Britain's demand to be allowed to impose agricultural tariffs and Australia's proposals for increased Empire preferences will not be popular. Look for a Canada-Australia row, with Britain behind Australia. Amid this hullabaloo, Japan may be able to creep into G.A.T.T. almost unnoticed.

- Look for major new developments on the Stock Exchange, aimed at providing capital for the small man. Reading between the lines of recent S.E. publicity brochure, one leading firm of stockbrokers suggest the S.E. Council may have decided to open a type of junior market for small new issues for companies still in the stage of development. Something, in fact, on the lines of the New York Curb Exchange. But official S.E. circles are non-committal.

- Don't expect any short term effects from drop in bank rate. Long term result : greater flexibility in capital market, easing of businessmen's expansion and modernization problems.

- Demand for reductions in purchase tax have already started. But retailers are worried. When tax was reduced this year they lost £15m. in tax paid on pre-Budget stocks that had to be sold at post-Budget prices. Result : orders for delivery from manufacturers after Christmas are being cut to the bone. Unless the Chancellor does something drastic, expect a pre-Budget slump in retail sales next year that will put the 1952 one in the shade.

SALIENT FIGURES OF THE MONTH

Production continues to rise. The June index figure (8) dropped seasonally, but was well above that for June in both 1952 and 1951. So was the manufacturing sub-index.

Later figures for specific industries show continuing trend. **Steel (12)** and **rayon (14)** are still breaking records, and **sulphuric acid (16)**, a good index of general prosperity, is up nearly 40 per cent. **Cars (17)** and **commercial vehicles (18)** are both doing well.

Unemployment (7) goes on falling: it has reached its lowest figure since 1951. **Gold and dollar reserves (30)** improvement continues, in spite of repayment of part of Canadian \$ loan.

Wholesale prices (33) continue to fall. But **import prices (34)** failed to decline in July for the first time for months.

Retail sales (25) were up in July, though food sales declined. Big rise occurred in jewellery sales.

Currency (26) and **bank deposits (27)** both show substantial rises, but bank advances are down. So, too, are **national savings (29)**.

'BUSINESS' INDICES

1. Production	1948=100	* 116.2	+ 0.4	+ 0.2
2. Purchasing Power	(do.)	* 104.4	+ 1.6	+ 3.2

MANPOWER

3. Total manufacturing industries	thousands	* 8,723	— 1	+ 97
4. Textiles	(do.)	* 969	— 1	+ 77
5. Distributive trades	(do.)	* 2,641	+ 3	+ 25
6. Coal (on colliery books)	(do.)	719	— 1	Same
7. Registered unemployed (G.B.)	(do.)	272.7	— 25.0	—120.8

PRODUCTION

8. Index of prodn.: total, all inds.	1946=100	* 119	— 4	+ 7
9. Coal (average weekly output) (thousand tons)		3,376	—784	—389
10. Gas available at gasworks (average weekly output)	(million therms)	41.3	— 3.0	+ 1.1
11. Electricity generated	(million kWh)	4,489	—137	+381
12. Steel ingots and castings (average weekly output)	(thousand tons)	276.6	— 61.1	+ 2.8
13. Cotton yarn	(million lb.)	* 14.1	— 1.2	+ 4.4
14. Rayon yarn and staple fibre	(do.)	* 35.04	— 1.87	+ 23.30
15. Worsted yarn	(do.)	* 18.3	+ 1.2	+ 6.4
16. Sulphuric acid	(thousand tons)	* 147.4	+ 6.0	+ 42.4
17. Passenger cars (average weekly output)(do.)		13.21	+ 1.70	+ 5.70
18. Commercial vehicles (av. wkly. output)(do.)		4.57	+ 0.24	+ 0.05
19. Permanent houses completed	(do.)	27.81	+ 1.21	+ 7.07

TRADE

20. Value of imports	(£m)	† 249.2	— 43.8	— 14.0
21. Value of imports, Western Hemisphere (£m)		* 59.6	+ 9.0	— 3.9
22. Value of exports	(£m)	† 198.8	— 35.6	+ 15.9
23. Value of exports, Western Hemisphere (£m)		* 36.5	+ 3.8	+ 8.9
24. Freight train traffic	(thousand tons)	† 5.55	+ 0.43	+ 0.13
25. Retail sale index	1947=100	* 124	+ 3	+ 7

FINANCE

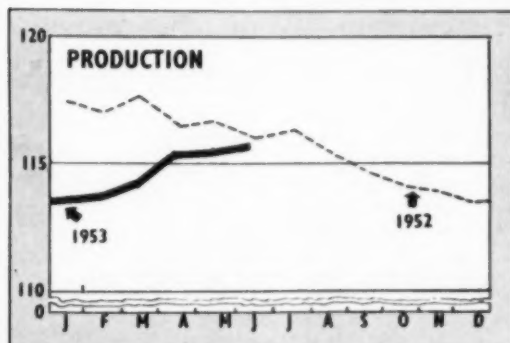
26. Currency in circulation	(£m)	1,509	+ 31	+ 87
27. Deposits, London clearing banks	(do.)	6,247	— 52	+184
28. Provincial cheque clearings	(£,000)	669	+ 6	+ 65
29. National savings, total outstanding	(£m)	* 5,993	+ 9	— 68
30. Gold and dollar reserves	(do.)	877	+ 32	+264

WAGES AND PRICES

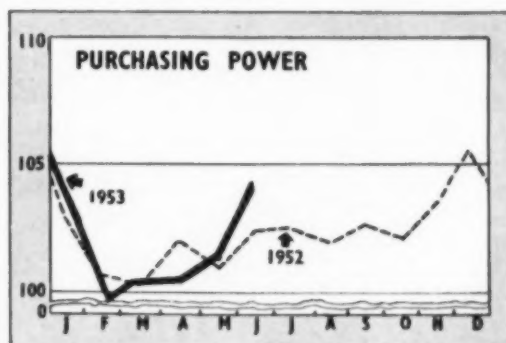
31. Weekly wage rates	1947=100	136	+ 1	+ 7
32. Retail prices	(do.)	141	Same	+ 3
33. Price indices of materials used in:				
Non-food mfg. industry	1949=100	† 142.8	— 0.5	— 14.4
Mechanical engineering	(do.)	† 143.2	— 1.3	— 8.7
Electrical machinery	(do.)	† 149.7	— 3.1	— 19.6
Building and civil engineering	(do.)	† 130.4	— 0.1	— 3.0
34. Import prices	1952=100	87	Same	— 13
35. Export prices	(do.)	96	Same	— 5

* May. † July. ‡ Four weeks to 14th June, 1953.
All other figures refer to June.

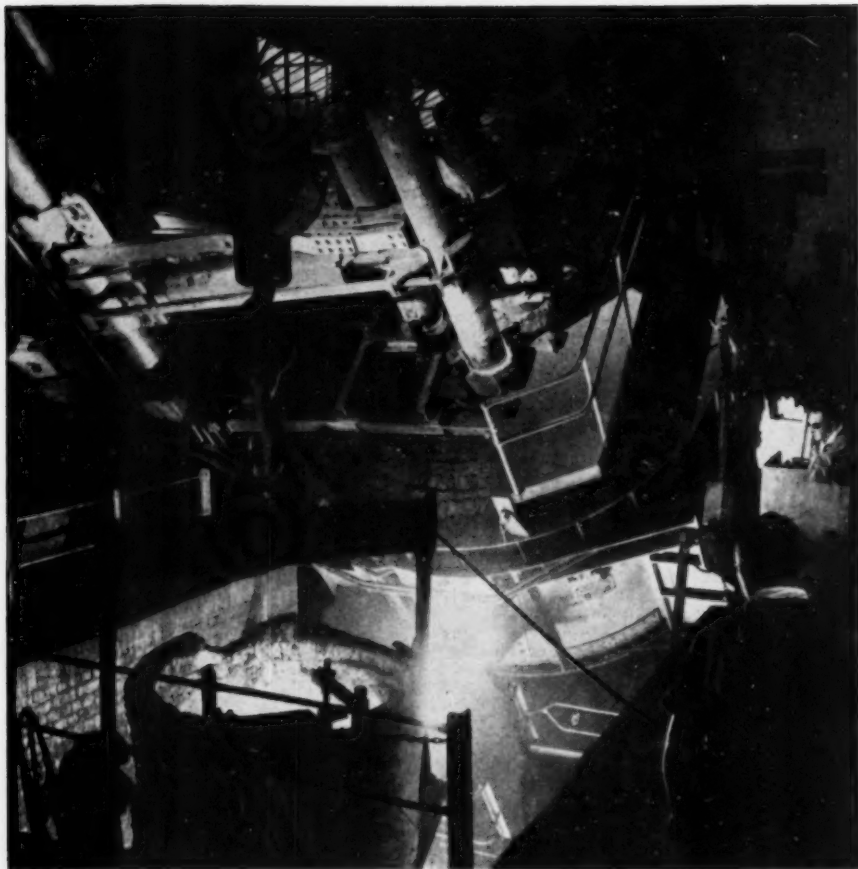
'BUSINESS' INDICES (1948 = 100)



A twelve-month moving average of the Official Index of Industrial Production (Total: All Industries).



An unweighted index of currency in circulation with the public, total bank deposits, and total outstanding national savings.



Tapping steel from an electric furnace; Kayser Ellison & Co. Ltd., Sheffield

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Electricity *for* PRODUCTIVITY

Issued by the British Electrical Development Association

HOME MARKET

Regional Surveys

Wales

UNEMPLOYMENT in July, at 23,330, was only 2.5 per cent of the working population, the lowest figure since September, 1951. The fall in recent months is the more remarkable since 5,000 workers were laid off permanently in April, following the closing down of a number of tinplate mills. All but 300 of these redundant tinplate workers have now been reabsorbed in industry.

Of 15 hand-mills scheduled to close this year, 10 have actually been shut down. Closure which was scheduled for a further five has been deferred and the amount of short-time working in these mills has diminished owing to a number of orders for specialized work.

An encouraging number of applications to establish new plants in South Wales and to build extensions has been received in recent months, following the slackening-off in inquiries in the early part of 1953.

Fewer restrictions now exist on new building, although the restriction on government spending still limits the number of extensions which can be allowed to government-owned factory premises.

Apart from the difficulty of persuading new industries to settle in the tinplate area, few former "black spots" in South Wales remain to be filled in with new industry. In the Rhondda Valley, for example, 24 new factories have been established and applications have been made for extensions to some of these.

Although a large amount of light industry has been established since the war, the basic industries remain of prime importance in Wales. A large number of women have been employed in light industry in the post-war years, but of the 136,000 new jobs which have been created in South Wales since 1938, two-thirds have been filled by men.

North-Western

COTTON men are happy. Production is rising again and the steady recovery in the labour position in both spinning and

weaving continues. On the selling side, current indications of demand are encouraging in many respects, even though sales to some overseas markets are still difficult or impossible. Experienced observers suggest that the proportion of total output being taken by the home market is being over-estimated; they suggest that the extent of the overseas trade is partly masked by the small size of individual orders. Major problem is finding labour.

Important part in expansion of trade is growing role of rayon. The spinning industry is now producing 2m. lb. of 100 per cent rayon yarn each week from staple fibre and another $\frac{1}{2}$ m. lb. of mixture yarn containing rayon. About one-sixth of all raw materials used by spinners is now rayon staple. Rayon yarn accounts for between a quarter and a third of yarn used by Lancashire weaving concerns.

Engineering firms in the North-West are still getting considerable export business, in spite of keen competition from other engineering countries. Some sections have a large amount of work on hand and heavy order books. In some cases, export orders are again being lost through inability to keep customers' delivery dates. Diesel engine makers and some machine tool firms are particularly affected.

After negotiations lasting 10 years, the final shape of the new Runcorn-Widnes bridge across the River Mersey has been decided.

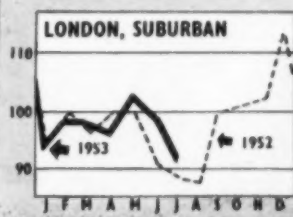
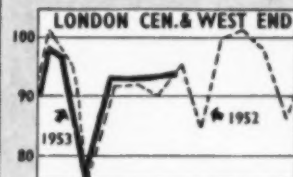
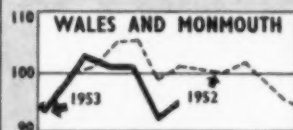
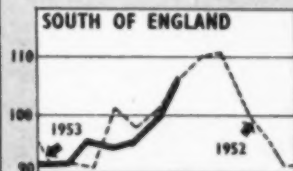
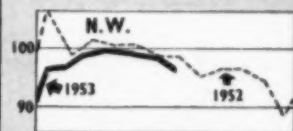
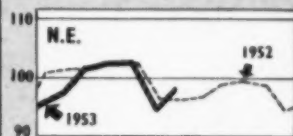
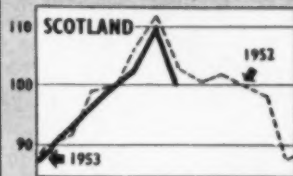
The Bridge Joint Committee meeting in Liverpool agreed to new Ministry of Transport modifications and gave the "go ahead" signal to the scheme. Tenders will be invited for the piers and anchorages, and work should start in the late autumn. It will be a

Continued on page ix

What the Charts Show

Indices in the charts show retail turnover in each region in non-food merchandise as a percentage of national average (=100) for the month. The charts are based on the Board of Trade retail sales indices.

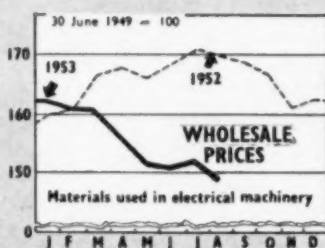
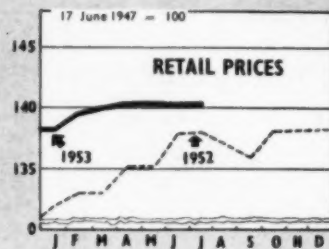
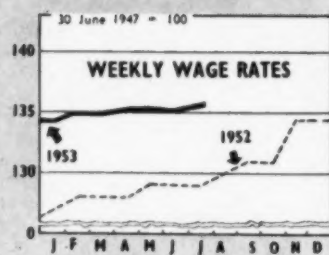
REGIONAL RETAIL TRADE INDICES



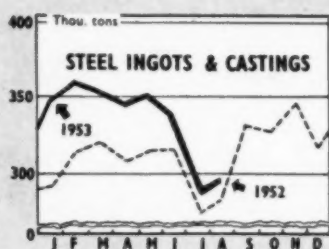
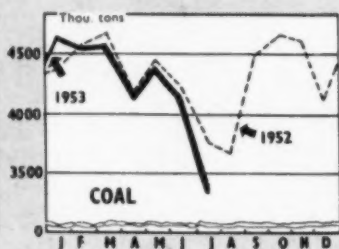
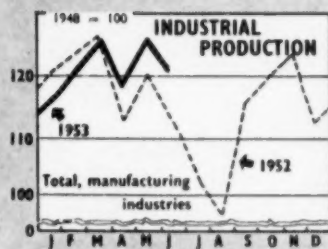
STATE OF THE NATION

From this comprehensive series of charts, covering the main economic factors affecting the state of the nation, the business man may gain a perspective of the situation governing his operations.

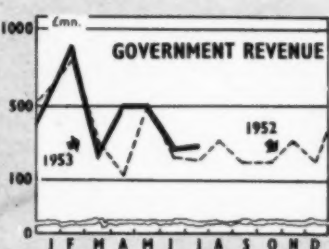
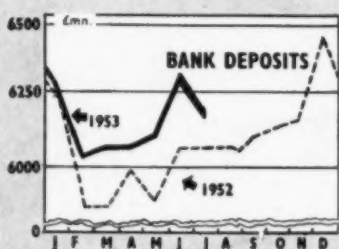
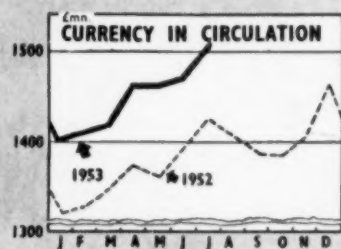
WAGES AND PRICES

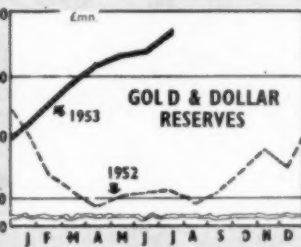
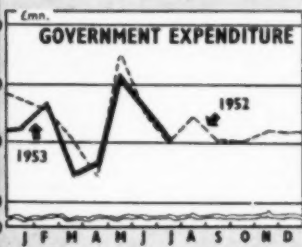
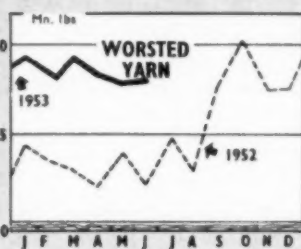
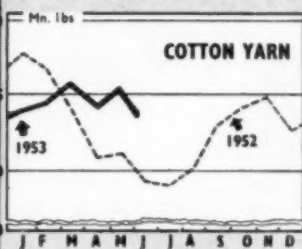
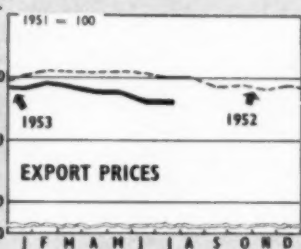
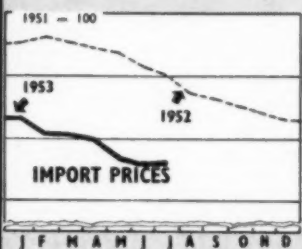
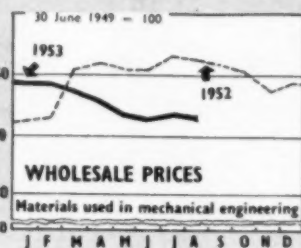
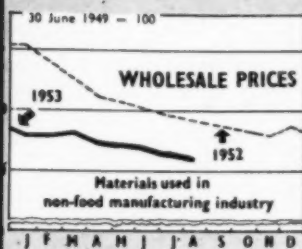


PRODUCTION

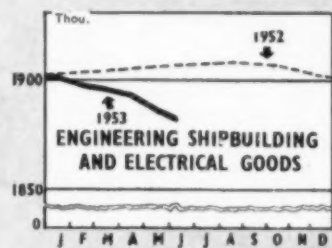
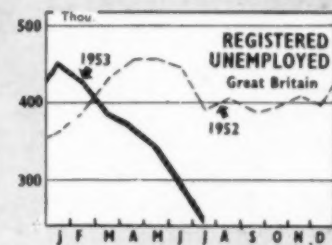
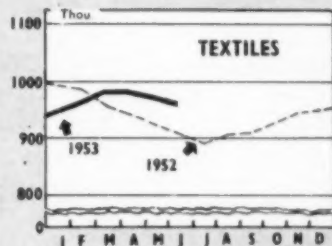
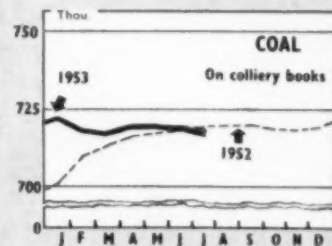
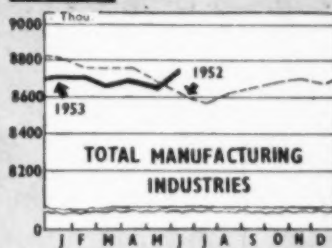


FINANCE





LABOUR





For whom the bell tolls

An overwhelming majority of doorkeepers and directors, messengers and managers, men and women, have the habit of eating three meals daily; with a predilection for doing so under cover and with the comfort of a dry spot wherein to sleep them off. As a habit it is ineradicable, costly and thinly indulged on a State pension of 32/6d. per week.

Modern industry accepts Pension Planning as an investment in personnel. It provides incentive and promotes good relations. It stabilises employment and standardises procedure for retirement.

In the last two years the total of sums assured under pension schemes planned and installed by The Noble Lowndes Pension Service exceeds £51,000,000.

Your pension problems will be dealt with confidentially and without obligation by the Managing Director,

The Noble Lowndes Pension Service

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3 NEWTON PLACE, GLASGOW, C.3 · 25 CROSS STREET, MANCHESTER, 2 · 9 TITHEBARN STREET, LIVERPOOL, 2
12 EASY ROW, BIRMINGHAM, 1 · 7 SOUTH PARADE, LEEDS, 1
21 COLLINGWOOD STREET, NEWCASTLE-ON-TYNE, 1 · 39 KILDARE STREET, DUBLIN

HOME MARKET REGIONAL SURVEYS (cont. from page v)

two-cable suspension bridge with a single carriageway.

Scotland

GLASGOW is to keep up its pressure on the government for an early decision on the proposed **traffic tunnel** beneath the Clyde at Whiteinch and Lindhouse. A special committee of the Corporation agreed to ask the Minister of Transport to meet City representatives to discuss construction of the tunnel.

Lord Provost T. A. Kerr will head the deputation, which will also comprise the chairman of the Clyde Navigation Trust, the Chamber of Commerce, the Clyde Valley Planning Advisory Committee, the Scottish Council (Development and Industry), and the Convenors of the Corporation Housing, Planning and Highways Committee.

John G. Kincaid and Co., marine engineers, Greenock, have purchased 500 tons of German **steel plates** in an effort to speed up delivery of propelling machinery for ships at present building on the Clyde and other shipbuilding centres.

The cost is considerably higher than the British price, and the order includes 300 tons of boiler plates.

The purchase was arranged after inquiries had shown that there was no hope of improved deliveries of home produced steel.

The shipping companies concerned were advised of the measures the company proposed to speed up delivery, and some agreed to meet the increased cost involved.

Yorkshire

THE Communist East German Government import agencies have agreed to take Yorkshire **woollen piece goods** as well as other traditional British exports as part of a trade agreement concluded with a London business firm at the Leipzig Trade Fair.

Orders are expected to reach Yorkshire within 90 days. The deal is stated to be worth over £500,000.

Outlay by the Imperial **Typewriter** Company, of Leicester, on their new factory at Hull amounted to £356,000 at March 31 last, and it is estimated that £270,000 more will be needed to complete the project.

This is disclosed by the chairman, Sir Joseph Holland Goddard, in the report and accounts for the

year to March 31 last, the first since the company were made public in January of this year.

The major part of the £270,000 needed to complete the project will become payable in the current year, but outgoings will be discharged out of current resources.

It is expected that a start on the assembly of typewriters will be made at Hull in the late autumn. No difficulty is expected in expanding a force of locally recruited workers to meet the ultimate labour requirements of the new plant.

Northern

THE National Coal Board is to extend its Monkton **coke** works at Hebburn, County Durham, at a cost of £2m. It has placed an order for a battery of 33 compound ovens and additional coal and coke handling and by-product plant. The extended plant will employ 180 men and use more than 500,000 tons of washed coal a year. By-products will include sulphate of ammonia, car and motor spirit, and up to 10m. cubic feet of gas a day.

A pipeline eight miles long will bring cooling water. The new plant is expected to be completed in about two years.

The provision of a **dry dock** at Wallsend, to accommodate ships of up to 45,000 tons dead-weight, is being considered by Swan, Hunter and Wigham Richardson, Ltd., the Tyneside shipbuilders and ship repairers.

Although plans are not yet complete and certain difficulties have to be overcome, it is hoped that work on the scheme will start next year.

The need for the new dry dock arises from the rapid growth in the size of oil tankers. Mr. J. W. Elliott, chairman of the firm, said at the launch, in July, of the British Merchant (32,000 tons dead-weight), the largest tanker to be built in the firm's yards: "We feel we should assist the companies who place orders with us for these huge ships, by providing facilities for their repair, and we, as builders, feel the need for docking close to the building berths."

The government are to be asked by the Northumberland and Durham County Councils for permission to start work on the vehicular **tunnel** under the Tyne.

The Tyne Tunnel Joint Committee, who include members of both authorities, have now agreed on general design and method of construction for the tunnel, which

would be sited alongside the present pedestrian and cyclists' tunnel between Jarrow and Howden. Cost of the main road tunnel is estimated to be in the region of £6m. It would have a carriageway 22ft. wide carrying two lanes of traffic and would be nearly a mile long.

The tunnel was first planned seven years ago, but owing to the government's restriction on capital expenditure only work on the pedestrian tunnel was carried out. This was completed in July, 1951.

Midlands

CONDITIONS in the Midlands iron and steel industry are much quieter than was the case some months ago. The demand for steel has eased somewhat though steelworks are still busy reducing backlogs of orders. There is still a heavy demand for plate, but re-rollers want more orders and have plentiful supplies of semis on hand to meet them.

In the **foundry** trade, sections making light castings are still very short of orders, with many firms working on short time, but those working for the motor, tractor and machine tool trades are busy.

In the engineering industries, **car** production is running at a rate higher than at any previous period, and **commercial vehicle** production has improved. Trade in the bicycle and motor-bicycle sections began to improve early in the year, and is now generally firm. Further improvement is generally expected by the end of the year.

A further reduction of 200 in the number of unemployed was reported to the Greater Birmingham Employment Committee at its quarterly meeting yesterday. The number registered on August 10 was 3,455 men and 1,736 women—figures for the previous two months were: June 15, 4,097 and 2,174; May 11, 5,197 and 2,452.

The percentage of unemployment in Birmingham in August was 0.8 of the working population, compared with 0.9 for July and national figures of 1.4 for August and 1.3 for July. There are at the moment more vacancies than applicants to fill them. This is particularly true of the plating and polishing trades. There has also been a considerable improvement in the non-ferrous metal industries; tea-packers are complaining that they could not pack fast enough to offset the shortage of labour; and there is a minor boom in the building industry.

RESULTS OF THE 1950 CENSUS OF DISTRIBUTION

How they can be used to check sales performances

THE following table, compiled by PROSPECT'S statistician, from the recently published Census of Distribution and Other Services, 1950 (H.M.S.O., 7s. 6d.) shows the surprising variations that exist in retail trade turnover per shop, and in spending per annum per head of population, between the main broad regions of Great Britain.

The census shows that in 1950 average turnover per shop in

Great Britain as a whole was £8,503, and that the average amount spent in retail shops in Great Britain as a whole was £118 16s. per head of the population. The regional figures differed from this national average, and the two "regional indices" have been computed by expressing the regional figures for turnover per shop and sales per head as a percentage of the comparative national average.

Regional Variations in Retail Trade

REGION	Population	No. of Shops	Sales (£'000)	Sales per head £	Sales per shop £	REGIONAL INDEX (Nat. average = 100)	
						Sales per head	Sales per shop
Northern	3,141,160	39,245	334,922	106.6	8,534	89.7	100.5
Tyneside Conurbation...	840,500	10,614	103,597	123.3	9,761	103.7	114.8
East and West Ridings ...	4,114,530	64,854	469,309	114.1	7,236	96.0	83.4
West Yorkshire Conurbation	1,703,261	28,995	217,186	127.5	7,490	107.3	88.1
North Midland	3,383,131	52,592	382,633	113.1	7,275	95.2	85.6
Eastern	3,066,972	40,529	347,432	113.3	8,572	95.3	100.8
London and South Eastern—Gr. London...	8,417,377	106,472	1,235,246	146.7	11,602	123.5	136.4
London and South Eastern—Remainder	2,560,740	36,365	316,841	123.7	8,713	104.1	102.5
Southern	2,649,637	33,691	318,555	120.2	9,455	101.2	111.2
South Western	3,010,930	39,739	336,209	111.7	8,460	94.0	99.5
Midland	4,425,120	63,071	499,561	112.9	7,921	95.0	93.1
West Midland Conurbation ...	2,242,286	33,021	267,835	119.5	8,115	100.6	95.4
North Western	6,461,203	108,775	739,737	114.5	6,800	96.4	80.0
South East Lancashire Conurbation	2,416,742	44,615	298,638	123.6	6,694	104.0	78.7
Merseyside Conurbation ...	1,393,616	17,411	153,464	110.1	8,814	92.7	103.6
Wales (including Monmouthshire)	2,599,200	36,744	243,582	93.6	6,666	78.9	78.3
Great Britain...	49,004,459	684,764	5,822,948	118.8	8,503	100.0	100.0

How to make your own local indices

THE figures shown are of general interest. But the census results can be of direct value to every sales manager in the country. For they give, town by town and trade by trade, in great detail, similar figures for all towns and cities with a population of 2,500 or over in Great Britain.

By selecting those figures which are of direct interest to him, the sales manager can construct, by the method outlined above, a series of regional indices that will throw up local variations in the sales of the type of product he is selling, and these local variations will, of course, be far greater than those for the

large regions quoted in our table. By comparing the national sales pattern which thus emerges with the performance of his own sales teams, he can spot at a glance the weak elements in his sales force—and take action accordingly.

As an example, PROSPECT has computed similar local indices for sales of men's wear in half a dozen towns taken at random. The variations are obviously considerable. Maidstone, for instance, spends more than twice as much per head of population on men's wear as Keighley and more than three times as much as Merthyr Tydfil.

Town	Population	No. of shops	Sales (£'000)	Sales per head £	Sales per shop £	LOCAL INDEX (Nat. aver. = 100)	
						Sales per head	Sales per shop
Keighley	56,980	30	239	4.19	7,967	107	61
Lancaster	51,750	26	367	7.09	14,113	182	108
Lincoln	69,900	28	510	7.30	18,214	187	139
Maidstone	54,940	30	470	8.55	15,667	219	119
Mansfield... ..	50,950	20	333	6.53	16,650	167	127
Merthyr Tydfil...	60,600	18	169	2.79	7,316	71	73
Great Britain...	49,004,459	14,587	191,424	3.91	13,133	100	100

Local Indices

Compiled for a Single
Industry: an Example

EXPORT MARKET SURVEY

BRITISH EXPORTS in August dropped sharply to £198.8m., due mainly to the short month (25 working days against 27 in July). Imports were also down to £249.2m., and the "gap," at £42.3m. was the lowest for many months. July "gap" was £50m., and average monthly figure for the first half of the year £63.8m.

Taking July and August together, average exports were £216.3m. a month, against £210m. a month in the second quarter and £208.5m. in the first. Exports to North America in August were £24.5m., the smallest figure for some months.

Most reports confirm the seasonal nature of the fall in exports. In spite of difficulties in certain markets, orders on the whole seem to be coming in well. Orders for capital goods seem to have increased sharply in the last three months. Car exports may tend to drop seasonally, but the gradual lifting of import restrictions will tend to offset this factor. Textile exports are likely to remain strong, in general, for some time to come.

IMPORTANT factor in the healthy export situation is the increase in **Australian imports**. A further 10 per cent relaxation of import restrictions as from October 1 will allow another £A45m. worth of goods yearly into Australia. Britain will be one of the chief beneficiaries. Goods from dollar countries will not be affected, but special arrangements are being made for Japanese goods.

Level of licensing of category "A" goods has been increased from 80 to 90 per cent of imports in 1950-51, those of category "B" goods from 40 to 50 per cent of the base year's imports, and a number of items have been put on a "no quota" basis.

New Zealand, too, is lifting barriers. Licences for imports of motor vehicles for 1954 are now being issued at a higher level than in 1953. Total imports are expected to amount to £10m.

SOMETHING to watch: tendency of Australian firms to secure protection for high-cost production of goods formerly imported. Main offenders are subsidiaries of British concerns. Australian Tariff Board is to be en-

larged and procedures streamlined, so as to be quicker in protecting domestic manufacturers who complain of competition.

EXPORT Credits Guarantee Department is being reorganized and enlarged. More staff are being engaged. Terms, too, are being eased. Credits can now be obtained for up to 90 per cent of an order for much longer periods—from three to five years for "desirable" markets.

GOVERNMENTS of **Northern and Southern Rhodesia** are to open negotiations in London for raising capital for construction of a £30m. hydro-electric scheme in the Kafue Gorge, Northern Rhodesia. Scheme will be completed in seven years, will have capacity output of 257,000-kW.—the power equivalent of 1m. tons of coal.

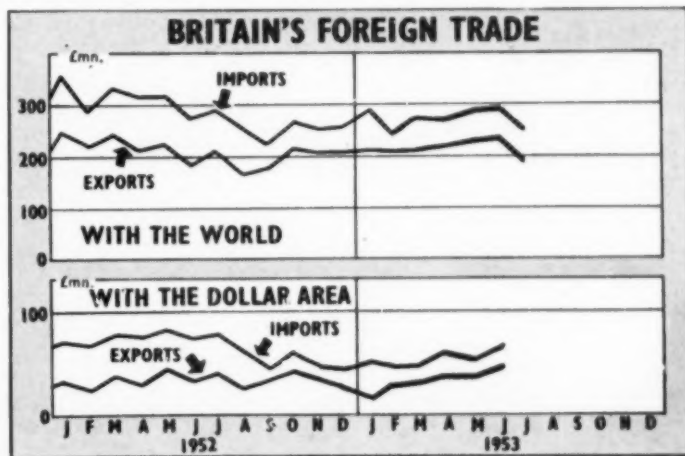
THE Americans are still talking recession. Currently, the boom is still on, but most serious publications that look beyond 1953 seem to think it cannot last. Date of the slump, however, has been put forward from autumn to next summer. Supporting data: accumulation of large stocks of raw materials and finished goods, especially in durable and heavy goods industries. Continued growth

of instalment credit is another factor.

Possibility for 1954: reduction in American imports of raw materials, and an all-out American export drive, backed by a new type of international development capital.

ENGINEERING and commercial mission back from **Moscow** reports orders for ships in excess of £10m. sterling—subject to export licences being granted by the British government. Firms concerned are Brook Marine Ltd. (of the Dowsett group), A.B.O.E. (Marine) Ltd., and Mirlees, Bickerton and Day Ltd. Aberdare Cables Ltd. report an order from the Russian government for 200,000 metres of high tension cable. Value (estimated): £200,000.

FIVE-YEAR economic development plan for **British Guiana** offers scope for exports of capital equipment. Recommended by mission sent by the International Bank for Reconstruction and Development, the plan calls for government expenditure of \$38½m. (£13½m.) during the five years 1954-58. Finance will be provided internally by Guiana sources. Of the total, 70 per cent will go on improving agriculture, transportation and communications, with the rest for forestry, industrial credits, electric power, housing, various public works and surveys needed for future development.



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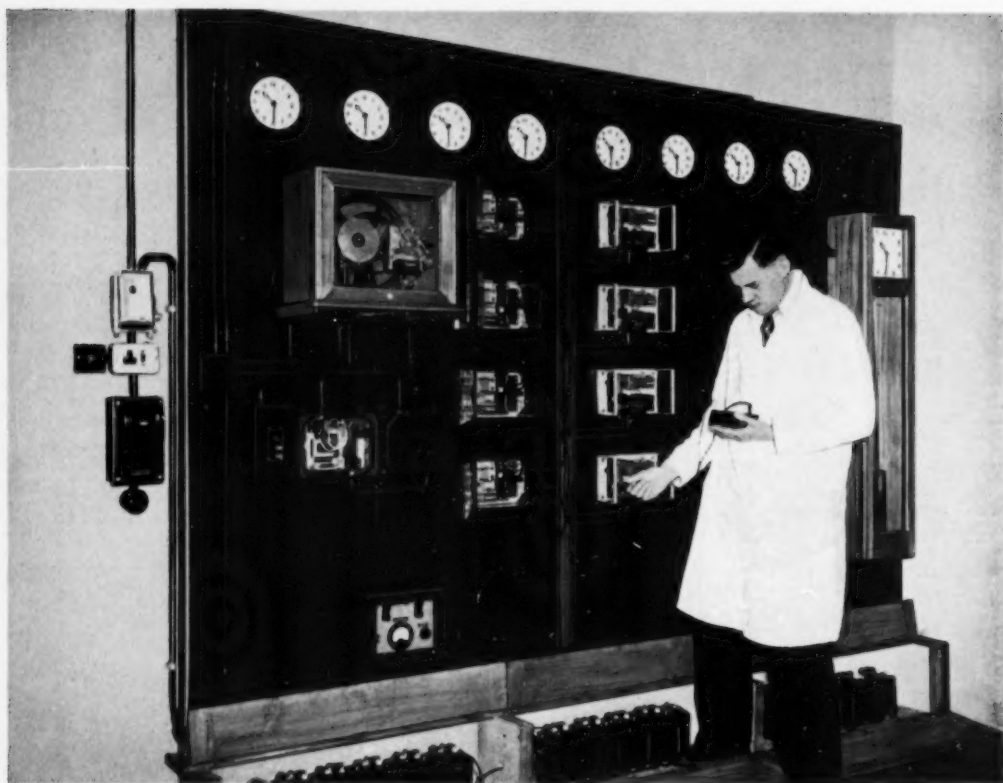
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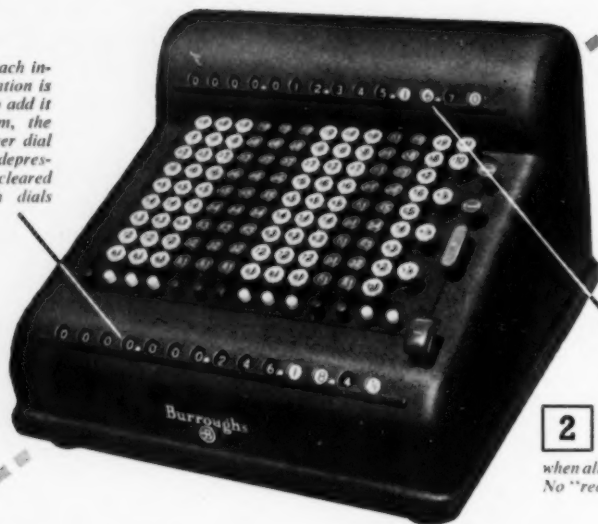
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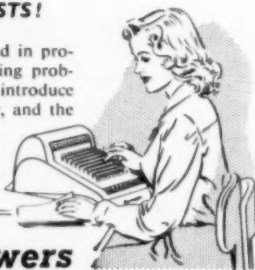
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The March of Business

THE THREAT REMAINS

THE T.U.C. debate on the General Council's interim report on nationalization lacked much of the fire and brimstone which marked last year's demands for more state ownership. The report, which advocates nothing more startling than a State water supply system, was adopted in the face of a substantial minority after little more than an hour and a quarter's discussion.

Clearly, the T.U.C. General Council has doubts about the wisdom of further nationalization on the present pattern. C. J. Geddes, chief spokesman for the Council, emphasized that before a new nationalization project could be announced the men in the industries concerned had to be convinced that the changeover was sound. If the T.U.C. appeared to be going slow, it was merely reflecting the caution of the trade union movement.

But although the General Council has so far won the day on this issue, it would be a mistake to believe that nationalization plans will disappear from the agenda of the forthcoming Labour Party conference at Margate. Some 2,640,000 votes at Douglas were in favour of referring back the Council's report for "gingering-up," and more than 1,600,000 votes were not cast. A clash is inevitable sooner or later between the industrial and political wings of Socialism and from it may emerge a new brand of State control, less drastic in its approach, but nonetheless essentially the same as the present system of State ownership.

★ ★ ★

IMPERIAL Chemical Industries Ltd. have concluded negotiations with the Italian chemical company Montecatini, of Milan, as a result of which Montecatini will, under licence from I.C.I., manufacture and sell in Italy the polyester fibre known in this country as Terylene.

As already announced, I.C.I. have decided to spend nearly £20 million on the Terylene plant which is now being built at Wilton, in North Yorkshire. The first stage of this great plant is due to be completed before the end of 1954, and to be in production in

1955. The second stage is due to be in production in 1956, giving a total output of Terylene of 22m. lb. a year.

In America the rights to produce and sell polyester fibres were acquired by E. I. Du Pont de Nemours in 1947. In order to meet the potential demand in Canada, the I.C.I. subsidiary, I.C.I. of Canada Ltd., is building a large Terylene plant at Millhaven, near Kingston, Ontario.

★ ★ ★

TITANIUM—THE TRUTH

TITANIUM has been called "the wonder metal" and "the metal of the future." But a more realistic approach was suggested at the Liverpool meeting of the British Association by a man who should know—P. L. Teed, deputy chief of research (aircraft), Vickers-Armstrong Ltd.

"Titanium has both advantageous and disadvantageous qualities," said Mr. Teed. "It is

resistant to a remarkable degree to salt water, even at the high temperatures experienced in a steam condenser."

Subject, therefore, to the limitations of its high cost it is of very definite interest to the marine engineer. The fact that it is indifferent to sea water in a high state of turbulence suggests that it should receive attention as a material for small high speed craft.

It is also largely resistant to electro-chemical corrosive attack. When titanium is in contact with other metals in the presence of an electrolyte, it is rarely the titanium which suffers.

Other advantages are its impressively high fatigue-resistance, its high melting point (1,725° C.—about 200° C. higher than that of pure iron), and its light weight.

As an example, the weight of aircraft fireproof bulkheads between the power plant and the surrounding structure would be cut to 57 per cent if austenitic steel was replaced by commercially pure titanium. In each plane the weight saved would be about 100lb.

In the case of aircraft, the high cost of titanium is overridden by the greater importance of the weight saved, since this permits the carriage of larger cargoes and a greater earning capacity per pound weight.

If titanium were used for rotating parts, flexibility of

Controlling Your Costs

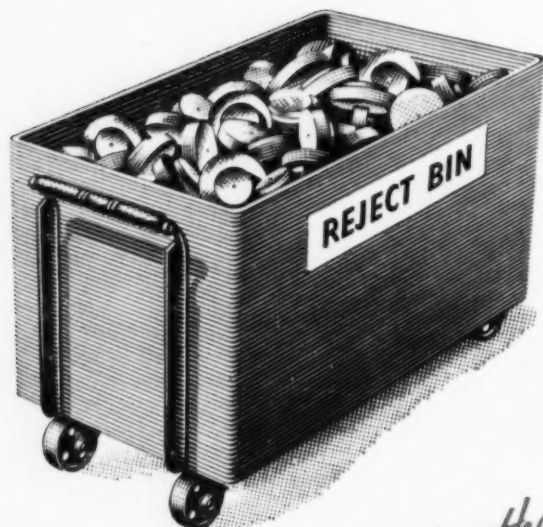
IF costs are to be cut, management must know in detail what their costs are, what they are likely to be, and just where the shoe pinches. The answer is modern management accounting. Now, in the second of BUSINESS's series of cost-cutting articles, Ian Morrow, formerly one of Britain's leading cost accountant consultants and now deputy managing director of the Brush Electrical Engineering Co. Ltd., describes just how such a system works in practice in his own organization.

OUR cover picture this month shows the electric machine department of the Brush works at Loughborough, with an alternator stator and rotor under construction.

CASE-HISTORY in cost-cutting comes from a very different field. An article on page 66 shows how an incentive scheme for on-site workers cut building costs.

Next month, BUSINESS will concentrate on practical methods of securing economies in purchasing and stock control.





Can't someone stop that row?

Thudding machinery, grinding gears, screaming drills . . . Once noise reaches a certain pitch, something must break . . . hands hesitate, heads whirl, voices rise, nerves shatter. Who can help making mistakes? The harder they try to compete with other people's noise the greater becomes the strain and likelihood of wasted materials, bad work and ill health. There is only one effective solution. Acoustic treatment and soundproofing by Cullum. Cullum know how, why and where sounds become noise. And they know the cure. You can find their work in every type of building all over the country. Have a talk with Cullum straight away.

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acceleration and deceleration of the engines would also be increased.

Titanium has, however, some grave disadvantages; it has 'quite deplorable' rubbing qualities; despite its high melting point it is distinctly temperature conscious; it is not possible at present to make satisfactory castings, and it is difficult to machine.

It can be worked by hot extrusion, using molten glass as a lubricant, but cannot be cold drawn.

★ ★ ★

FINAL arrangements have been announced for the 10th International Management Congress, to be held in Sao Paulo, Brazil, from February 19-24, 1954. Eight reports, prepared by national committees of the International Committee of Scientific Organization, will be presented and discussed.

★ ★ ★

CUTTING FUEL COSTS

LAATEST report of the British Productivity Council on Fuel Conservation (5s.) bluntly states a few home truths about British fuel utilization. Eighty per cent of the heat in all coal is lost, a great deal because of ineffective utilization. And fuel consumption of manufacturing industry could be cut by something of the order of 30 per cent—or as much as 10m. tons of coal a year.

What is wanted, say the 12 experts responsible for the report, is a new approach by the Government to the whole question of energy production, and of industry's problem of finding capital for the installation of modern fuel-burning equipment. Even so, there is much that industry can do, here and now, to cut its fuel costs, without large-scale capital investment. For every 1 per cent saved in steam production, for instance, 3 per cent or more could be saved in its utilization. How? "The works engineer should be involved equally with the production engineer in all matters relating to process."

Other points:—

Control steam pressure accurately, particularly at low pressures.

Schedule work flows so as to avoid heavy steam peaks.

Collect all condensate and return to the boiler.

Use "degree-days" (indices based on past temperature records) to

People Products Places



CHECKING UP—Recent visitor to the U.S.A. was Miss Margaret Baldwin, store analyst of the Lamson Engineering Co. Ltd. Miss Baldwin, who acts as an adviser to Lamson customers, was studying cash and credit control methods in departmental stores in co-operation with the company's American associates.



BOOK HERE—Inside British Railways' new West End travel centre in London, which features fluorescent lighting concealed behind an "egg box" ceiling, air conditioning and a projector for showing travel films. The centre covers all services of B.R.—seat reservations, British and Continental train travel tickets and steamship and sleeping car bookings—an advantage to ordinary travellers, overseas visitors and businessmen.



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P.P.P. cont. ▶

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Letters

Money and Cost Control

The Editor, "Business."

SIR,

I congratulate you on your new feature on Cutting Costs, and the soundness of your comments on manpower measurement and plant productivity. However, I consider it a great pity that you should deprecate the use of money values in the control of day-to-day costs. The various efficiency records which you exemplify are vital parts of a whole, but can encourage unwarranted generalizations and misinterpretations until the next step of relating them to the whole is taken, which can only be done by money values. Because of the diversity of measuring sticks necessary in the control of individual manufacturing processes, money is the *only* universal medium through which results can be expressed and summarized in an intelligible manner, and it can be done.

Let us consider the following operating statement for a month, which could apply to most types of manufacturing company:—

Operating Statement for Month

Variances	£	Sales Invoiced	£
Materials usage	+ 30	Less Standard	10,000
" price	+ 150	Cost of Sales	9,124
Labour efficiency	- 53	Standard Profit	876
" rates	+ 20		
Overheads volume	+ 250		
" budget	- 90		
Net Production			
Variance	+ 307		
Net Profit	569		
	876		876

This statement incorporates, and summarizes for the General Manager, all the significant points of the various charts, etc., which you illustrate in your article, and a wealth of other information besides. Furthermore, it can be produced at less clerical cost than a comprehensive "historical" job costing system whose limitations you rightly deplore.

In order to remove common misunderstandings concerning such a statement, let me point out that it does not give the same net profit figure as would be arrived at by a job costing system—it is not the same result arrived at by a differ-

People Products Places

cont.



HIGH VOLTAGE DOLLARS—Starting its journey to Canada is the largest voltage power transformer ever made in Britain. Manufactured by Ferranti Ltd., it is intended for the Alcan project in British Columbia.



BOOSTING BRIDGES —

After a successful visit to the Middle East, Tom Storey, chairman and managing director of Thos. Storey (Engineers) Ltd., has now made a sales promotion tour of U.S.A. and Canada. His aim was to boost sales of Bailey Bridging equipment—of which his firm have manufacturing and marketing rights—for use in oilfields, dam construction work, tunnelling and other projects.



SEEING BEFORE DECIDING—Some of the employees at the Hammersmith works of IBM United Kingdom Ltd. about to start an all-expenses-paid visit to Scotland. Reason for the trip was to show them the new factory IBM are building at Greenock, and the surrounding district. These workers are in a department earmarked for early transfer to the new plant and the visit gave them the opportunity of getting all the facts before deciding whether or not they wanted to move.

P.P.P. cont. ▶

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Sales and Service Everywhere

ent means and shown a different way.

It shows what the sales invoiced in the period were estimated to cost and—the most vital factor—how much the month's manufacturing operations varied from standard, and where. In other words, a profit and loss summary of the month's manufacturing operations is given, as well as a profit and loss account of the invoiced sales and standard cost of sales. The two are quite distinct, because in the average manufacturing company a considerable part of the product of any one month's expenditure on materials, labour and overheads is not physically despatched and invoiced for several months. In these common circumstances it can be said that a monthly operating statement on the lines illustrated, forecasts the future profit or loss, and in many cases enables remedial action to be taken before things go too far wrong, either by righting production errors or adjusting selling prices.

With an orthodox job costing system, there is of course no element of forecasting. It is the journalist's report of a battle, not the general's signalling and intelligence service.

The procedures which you advocate are part of the foundation for standard costing, but surely it is possible, and essential, to build a gold and silver structure thereon!

Yours faithfully,

J. RIDDOCH,

Joint Managing Director
Harold Whitehead and Partners Ltd.,

31, Palace-street, S.W.1.

★ ★ ★

Accountants' Organization

The Editor, "Business."
SIR,

In the September issue of "Business" there is a report commencing "Formation of a National Association of Practising Accountants is proposed by important and certified accountancy bodies . . ."

In this connection it seems desirable that I should mention that although certain members of the accountancy bodies referred to have identified themselves with the proposed new body, they have done so in purely personal capacity and the accountancy bodies in question are not, as such, associated with the project in any way.

Yours faithfully,

F. CAMERON OSBOURN,

Secretary.

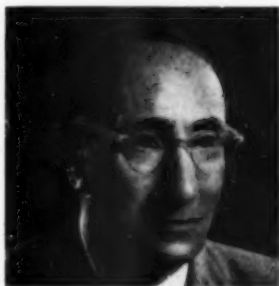
The Association of Certified and Corporate Accountants.

22, Bedford-square, W.C.1.

People Products Places cont.

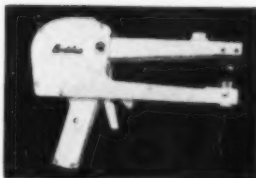


STANDARD BABY—Sir John Black, deputy chairman and managing director of the Standard Motor Co. Ltd., with his latest product—the new Standard Eight. Already in volume production, the Eight has a top speed of 62 m.p.h., a petrol consumption of 45 miles per gallon and a retail price of under £500 including purchase tax. This photograph of Sir John was taken when he was testing the new car in North Wales.



MARKETING MISSION—H. Arthur Engelman, managing director of a Philadelphia (U.S.A.) advertising agency, is visiting Britain this month to confer with British manufacturers interested in long-range marketing opportunities in America. These consultations will supplement exhaustive market reports that Mr. Engelman's agency prepares for British exporters.

PLASTIC WELDING TONGS — For the first time, large and bulky objects can now be packaged in welded P.V.C. The machine that can do it is the JP.9 portable high-frequency welder; with it, the operator can take the weld to the job.



BUILT IT THEMSELVES—This new building, which now houses the administrative and drawing offices of George W. King Ltd., mechanical handling and farm equipment manufacturers, was designed and built by the company's own building department. The completion of these offices brings the whole organization under one roof and severs the link which the firm has had for many years with the town of Hitchin.



series **'E.N.'**

**A new range of ADDING MACHINES and
SMALL OFFICE BOOK-KEEPING MACHINES**

(standard models available for immediate delivery)

The FEATURES that make the difference . . . Automatic Debit and Credit Balances ;
Automatic Grand Totals and Sub-Totals ; Self-printing Noughts ; Automatic Spacing ;
Automatic Punctuation and Colour Change (Red and Black) ;

No Levers ; Fingertip Control.

THE NATIONAL CASH REGISTER COMPANY LTD.

LONDON AND ALL PRINCIPAL CENTRES

MAKERS OF THE FAMOUS 'CLASS 31' DIRECT ENTRY ACCOUNTING MACHINE

BUSINESS Examines a New Selling System



Credit cards, American and British. Rear one is used in U.K. by American tourists.]

An important development in American retail marketing methods—the personal credit card system—is now established in Britain on a limited scale. Here, as in the States, it has started with hotel and restaurant facilities and is directed mainly at top executives' business "expenses". Will it also spurt ahead as a general merchandising method affecting millions of ordinary shoppers? In this exclusive article, BUSINESS analyses the system's principles and prospects.

Personal Credit Cards: Their Future in Britain

By PETER SPOONER

IN America, the personal credit card system is having a significant effect on the retail sales pattern. With these cards, customers are buying goods and services on the principle that one monthly cheque covers all purchases from all shops. Because of them, small shopkeepers are able to offer the same credit facilities as large department stores without having to tie up their working capital in accounts receivable. Almost everything from hardware to movie tickets is being sold in this way.

The essence of the system is that otherwise-orthodox charge account business is financed by a third party, generally a bank. Individual schemes are promoted by enrolling a number of estab-

lished traders as supply-members and issuing cards to applicants—not necessarily bank customers—whose credit rating is good.

A credit card transaction can be broken down into three stages:

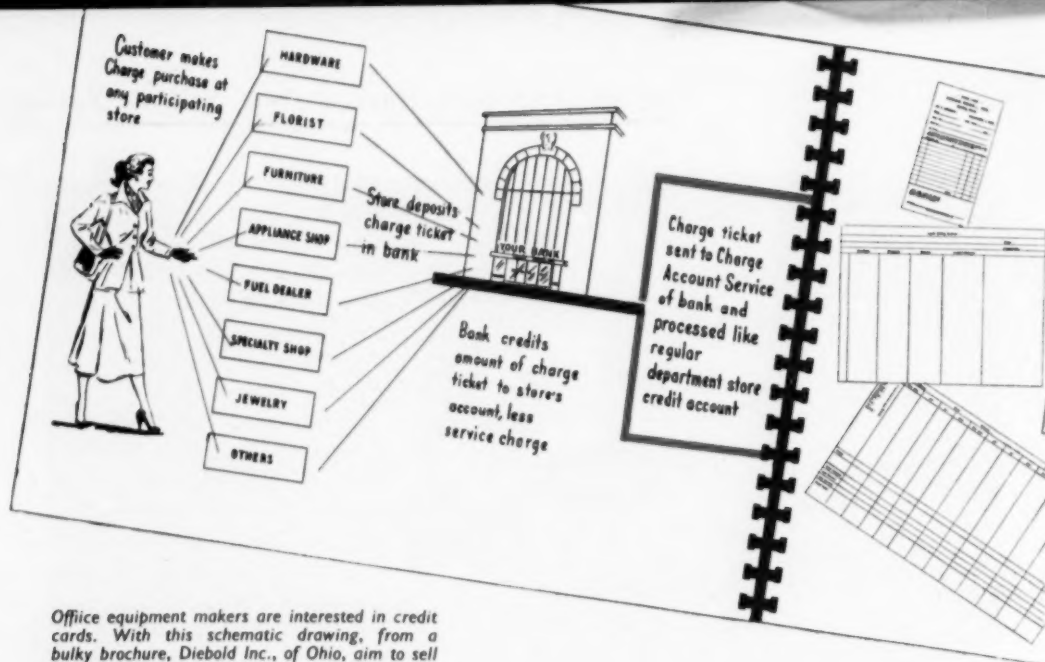
The customer picks his goods, shows his card and signs a sales voucher. He pays nothing, then or later, towards the scheme itself.

The supplier sends the voucher to the scheme's promoters, and immediately receives its face amount, less a small service charge (usually five per cent). In effect, he is selling his accounts receivable as soon as they are contracted.

The promoters, in due course, bill the customer. All his credit card purchases during the preceding month are incorporated in one statement, to which the original sales vouchers are attached.

Credit cards are not new. Some American hotel chains introduced them as long ago as 1910. More recently, the system has been adopted by multiple stores and, on a larger scale, by leading oil companies. But only since 1951 has it really developed as a general merchandizing method.

This development has been split into two forms:—



Office equipment makers are interested in credit cards. With this schematic drawing, from a bulky brochure, Diebold Inc., of Ohio, aim to sell the system—and their billing machines—to American bankers

1 National schemes promoted by specialist concerns. Foremost are National Credit Card Incorporated, which now claim 250,000 card-holders and 20,000 supply-members. Also in this field are the Diners' Club and Mastercharge. (Another concern, Go Europe n' Sign, specialize in credit card facilities for American tourists; their scheme is said to involve about 500 supply-members, and payments are made through dollar accounts in nine European banks.)

2 Local schemes promoted by banks for the benefit of traders and customers in certain areas. In Spring, 1952, there were about six of them; now there are more than 60. It is undoubtedly these merchants' charge account plans which are developing the credit card system at "High-street" level.

The British approach can be summed up in two words: cautious and exclusive. Here, as during its early stages in America, the facilities which the system covers are limited to high-class hotels, restaurants, gift shops and car-hire services. And the cards themselves are issued most discriminatively.

What are the prospects in Britain?

This question is not easily answered. The few existing schemes will undoubtedly expand; others may start. But less certain is whether the system will be adapted to the general pattern of British retailing—a pattern which includes comparatively few of the conditions under which it thrives in America.

Its chances of success in any country depend, broadly, on two factors: the native attitude towards all forms of credit buying and the extent to which bad debts can be controlled. These factors are obviously related.

Fresh Twist

In America, ordinary charge account services and other credit facilities are firmly established methods of domestic buying; the personal credit card has only given them a fresh twist. In Britain, however, where a large section of the community is inclined to regard with suspicion any financial dealing which does not involve the immediate exchange of cash, the introduction of credit cards on a comparable scale would be revolutionary.

The promoters of British schemes doubt the financial stability of developments on that

scale. In the administrative difficulties of converting domestic accounts into cash—plus the risk of bad debts—they see almost insurmountable problems.

It is true that credit card sales vouchers, in the form of promissory notes, may legally be regarded as "negotiable instruments." But that, in itself, does not guarantee prompt payment. The American voucher is normally worded as a draft (no stamp is needed to make it valid), payable to the supplier, who endorses it "without recourse" to the bank.

But the real distinction lies in the enormous value which the average American sets on his personal credit rating. He knows that to default once may add his name to the black-lists of other trading organizations, and may even turn his domestic finances upside down. Behind this knowledge is the remarkable ease with which a private citizen's credit rating over many years can be checked through organizations like the National Association of Credit Men and Dun and Bradstreet, Inc.

No such "background" exists in Britain. Although the use of bank and business references provides an unwieldy alternative, any attempt to extend credit card shopping to suburbia and beyond

is bound to involve a large number of unknown quantities.

An additional point is that the American banks draw collateral benefits from their merchants' charge account plans, the heavy inaugural expenses being at least offset by the goodwill and extra bank business which are thus created. Admittedly, the banks believe that credit card schemes can be profitable ventures in their own right—but this belief, in many cases, is still unfulfilled.

Here, then, are the major differences in the conditions under which the system is operated in Britain and America. Their combined effect is to suggest that the British prospects are limited. BUSINESS considers, however, that it would be unwise to leap to the conclusion that our retail sales pattern is immune to such revolutionary developments. The purpose of this article is to present facts which readers may judge for themselves: to survey current activities and definite plans in the British field, and to provide, as a background, working details of typical American schemes.

The difficulty of investigating private credit ratings has shaped the policy of the main British credit card concern, C.C.F. Club, Ltd., which started just over a year ago. Unlike those of the American Diners' Club, by which C.C.F. were inspired, the guinea-a-year members—now more than 2,000—are drawn almost entirely from the executive class, and monthly statements are sent, in most cases, to the companies which these men represent.

Through catering specifically

for business entertainment expenses, C.C.F. have barely had to touch the reserve set aside for bad debts; in the first year, involving business worth £40,000, the only loss was £12, due to the liquidation of a small company. There is no credit limit on individual bills.

Included in the list of supply-members, now approaching the 300 mark, are top-grade hotels in London and elsewhere, night clubs, department stores, outfitters, jewellers, florists, wine merchants, travel bureaux, theatre ticket agencies and secretarial services. The procedure follows the American model in almost all respects.

Direct Approach

Membership has been built up through a direct approach to leading firms, and through personal recommendations. Supply-members make no initial payments, and the scheme is "sold" to them on the ground that the publicity and additional business arising from it are more than enough to cover the usual 7½ per cent service charge. All bills are paid by C.C.F. as soon as supply-members send in statements.

Two important developments are planned. The first is the introduction of a secondary card to cover commercial hotels and car services for travelling salesmen. The second is the extension of the scheme to petrol stations throughout the country, providing a valuable service for firms operating their own transport fleets over irregular routes. In the

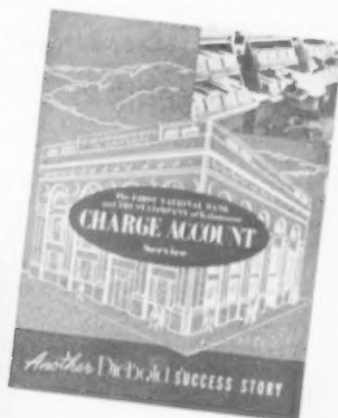
latter case, C.C.F. cards will be issued under vehicle registration numbers, and drivers will no longer have to carry large cash "floats."

One difficulty is that the margin of profit on petrol sales is already small without having to stand a credit card service charge. (In America, it is largely this difficulty which has prevented the "universal acceptance" schemes sponsored by N.C.C. and others from superseding the no-charge-to-the-garage schemes operated by individual oil companies.)

As a third development, C.C.F. are planning to provide facilities for members travelling on the Continent. These will have to wait, of course, until currency restrictions are lifted.

Comparative newcomers in the British field are Personal Credit Card Company, which act as agents for National Credit Card Inc., of America. Their present functions are to arrange facilities for N.C.C. members visiting Britain, and to enrol other American and Canadian tourists as members of the parent company.

The procedure is simple. Copies of members' British bills are airmailed to N.C.C. in America. Under a stipulation by the Bank of England, N.C.C. cable back the full face amounts to a dollar account in Britain, through which supply-members receive prompt payment less the service charge. N.C.C.'s only direct financial bene-



Credit card department of Kalamazoo's First National Bank and Trust Co. is used as a showpiece in Diebold's sales promotion material

only 19 per cent of all retail trade in 1951 was on a credit basis.

The latter figure has increased considerably since then. Credit cards are playing a significant part in the battle (by no means exclusive to America) between multiples and small independent retailers. The independent can now compete on more equal terms; to use the credit card system requires no capital outlay, and also absolves him from the paperwork normally associated with charge account business.

Increased Trade

He is able to appreciate the department store quip that "a charge account customer is your customer, but a cash customer is anybody's customer." And he is reaping the benefit of impulse sales which might never have fruited as cash transactions.

An example of the increase in trade is given by the First National Bank and Trust Co., Kalamazoo. This bank, which operate a charge account service under licence from the Franklin National Bank, Long Island, started in September, 1952, with 26 supply-members and 15,000 card-holders. Within eight months, the number of suppliers had increased to 105 (about 50 others were rejected for various reasons) and the number of card-holders to 21,000.

The increase in trade by these suppliers varied between five and 50 per cent, with an average of nearly 20 per cent.

This state of affairs interests manufacturers. They are aware that the small shopkeeper—now able to carry a much wider range of merchandise—does not qualify for the quantity discounts often made to department and multiple stores. Thus, there is a definite tendency to increase both manufacturers' and wholesalers' profit margins without affecting consumer prices.

In addition, the release of working capital formerly tied up in accounts receivable enables many traders to pay their suppliers' accounts more promptly. And, of course, the over-all trend is to increase sales generally.

It cannot be overlooked, however, that the cost of running these schemes, both in equipment and labour, is considerable. The

bank have to set up a special department to handle their credit card business. Accounts, divided into alphabetical segments, are distributed among a number of desks, from which all billing operations, usually on a cycle plan, are carried out. From these desks, too, authority has to be given for credit over "floor limit." All relevant documents are microfilmed before statements and sales vouchers are sent out.

The initial cost of launching a local scheme, including publicity, has been estimated at about 40,000 dollars (£14,275)—and it may be up to two years before anything like the peak level of business is reached. First National, Kalamazoo, have just been breaking even since starting their scheme. Franklin National, Long Island, earned 2,000 dollars (£715) during the six months of 1952 that their scheme was in operation, lost 15,000 dollars (£5,355) last year, and hope to break even this year. First National, Jersey City, N.Y., were "in the red" one year after their scheme had started.

There is no doubt that British bankers have been watching these American activities with interest. But none, apparently, has a scheme—even in the blueprint stage—for developing the system here.

Their nearest approach to it is

a still very distant relation known as the traders' credit scheme, which enables shopkeepers to settle all accounts with suppliers by sending one cheque and a list of names to the bank, and which competes more or less with the clearing-house schemes run by some trade associations. Under the present economic conditions, it seems unlikely that any of the major British banks will be tempted to go much farther than that.

Even in America, some bankers are shaking their heads over the system's new impetus. They question the advisability of adding yet another layer to an already tall lending programme, total consumer credit having increased by more than five times since 1945.

Against that, however, can be set the trade stimulus implied in a remark by a housewife in Kalamazoo: "It's so easy to charge things, I find myself buying more than I otherwise would."

Before this is echoed by the ordinary housewife in Rochdale or any other British town, there will have to be a significant change in the general attitude towards credit buying. The personal credit card is unlikely to pioneer that change. To achieve success on a broad scale, it will have to develop as an integral part of the whole retail sales pattern.

Six Advantages of Credit Card Trading

To the customer:

1. Purchases need not be limited by the amount of cash in his pocket.
2. Goods may be charged at any store displaying the scheme's symbol.
3. A one monthly statement for all credit card purchases simplifies domestic bookkeeping.

To the shopkeeper:

4. Cash is received as soon as sales vouchers are deposited.
5. Neither capital nor extra labour is needed to handle this charge account business.
6. Money formerly tied up in accounts receivable may be used to extend stock or to improve the shop itself.

How Management Accounting Gives Cost Control

THERE are three major problems in management accounting. One is the creation of the machine, the second is keeping the machine running, and the third is using the machine intelligently.

The creation of the machine is a subject in which accountants must be vitally interested. The professional institutes must produce the men capable of the creative work of designing and installing control schemes and training men to run them.

In some ways, the second problem is the most difficult—to get the right type of man to devote himself to keeping the system going.

Using the results intelligently is largely the responsibility of management, but education and guidance from the accountant can go a long way towards making the use more effective.

Background

Before describing briefly how one fairly large group of companies uses its "management accounting," perhaps it would help if some background were sketched in. The group is a relatively large organization employing 10,000 people in some seven major manufacturing units, up to approximately 300 miles apart, and making a fair diversity of products. Until a few years back, the various companies were independent. A wide range of electrical and diesel power is covered, from 1½-h.p. to 3,000-h.p. diesels and from fractional horse-power motors to large turbines.

The managerial policy is the now fashionable one of decentralization of responsibility and centralization of control. The first is achieved by allowing the local

By **IAN T. MORROW, C.A., F.C.W.A.,***

Deputy managing director, Brush Electrical Engineering Co., Ltd.



Top management—if they are to cut costs—must be able to control them. New methods of management accounting, such as budgetary control and standard costs, give the busy managing director a clear picture of what is going on in the business—and how far and where performance is diverging from plan. Here an accountant turned manager shows just how these techniques work in practice in one large organization.

managing directors the power to hire, fire, buy and sell, provided their actions are in furtherance of group policy. There are five specialist functional directors (although called directors, they are not, with one exception, on the main board, but on a junior board), whose job is to advise the managing director of the group and the managing directors of the factories on their particular functions. They cover sales, technical, personnel, finance and manufacture. They meet periodically with the managing director and assist in formulating policy, and then, by visiting the factories, see that the managing director's policy is being carried out.

The managing director visits every factory at least once a month and holds a local board meeting.

It should be added that there is an additional problem in that the group is largely an exporting company, with various selling subsidiaries overseas. Competition is therefore fierce.

Perhaps the most surprising thing to accountants would be to



realize the limited amount of time that is available to executives to study figures and the results of the management accounting system. So much time is taken up with personal contacts that there is a tremendous temptation to push figures aside.

Another problem is the sheer monotony of going through the same kind of figures month after month. I used to believe that a good executive would study every

★ Condensed from a paper given to the Scottish Chartered Accountants' Summer School at St. Andrew's.

return every month, but I now believe that in self-defence he must practise considerable flexibility and study only those to which his attention is drawn by his experts.

It may seem a wasteful process to create a considerable amount of figures, only a proportion of which is ever going to be used; yet, if management accounting is really to serve the ends of management, it must be, to a certain extent, a machine which is prolific in its products and many must be wasted.

A very simple example will perhaps explain what I mean. Eighteen months ago, when there was an enormous shortage of material for the engineering industries, stock control was no problem; the real problem was getting the material into the factory. But the stock control records continued to be produced, although they were not used until the market suddenly became easier. It was then possible, because of the machinery already running, to take swift and effective steps to control the level of stocks before they got entirely out of hand.

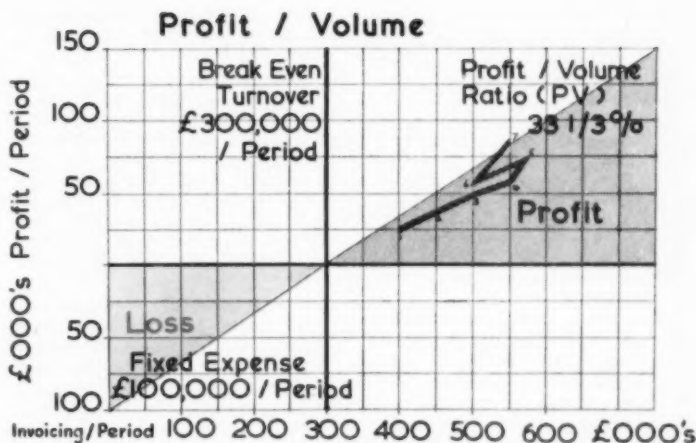
Need for Standards

Almost every manager who has ever discussed control has insisted on the paramount necessity for speed.

The other lesson, which again is now accepted almost universally, but was bitterly opposed for many years, is the necessity for having standards or budgets. Even standards which are theoretically useless are often valuable in a narrow field, and the art is to drop them as soon as they do not reflect even an approximation of the truth.

In building this control, the most difficult problem of all was, paradoxically, to make sure that a uniform code of accounts was used throughout the group. The natural conservatism of the constituent members and the violent reaction to standardization were sufficient to deter for some time the very obvious step of having a common code of accounts, but once it was introduced it was found to be simple and easy.

Nearly all the companies had been practising job costing, with the costing very much separate from the financial accounting. A scheme of budgetary control and



standard costs was evolved, tried out at once of the factories, and then installed throughout. It is still being improved.

The budgetary control and standard cost scheme is the foundation of all the controls. The exercise of control is a never-ending process, but a convenient plan to start in considering the problem is the time when the first budgets for the calendar year are being developed.

The first figure which is required is the sales budget in quantities and products, and in value, month by month. There is quite a large amount of inter-company sales which have to be agreed before they are put in the budget. This takes considerable time and necessitates a great deal of statistical analysis and the study of reports from our world-wide selling organization. At the same time, the expenses—which are broadly divided into direct labour, direct works, general works, design, selling and administration—are being studied in detail by account number for each individual department. The expense budgets are prepared on the basis of normal operation, which is usually somewhere between 60 and 80 per cent of single-shift capacity.

The product costs are built on these normal budgets and are applied to the sales to give the expected profits; but, as the costs are at normal, a forecast has to be prepared of the variances for each period. As a further check, each item of expense is compared with the previous two years' expenditure. At this stage, a statement of the expected profits is prepared.

Diagonal line shows expected profit at different levels of turnover; zig-zag line shows actual profit in relation to turnover in last 7 periods.

The first budgets are checked against the profit to volume control charts, and a careful analysis is made of the fixed and variable expenditure in order that the new profit to volume charts can be redrawn. If the forecast profit for each period is widely different from the trend shown on current profit to volume charts, a close study is made to find the reasons. During the weeks that follow, these budgets are scrutinized by the functional directors, each of whom, of course, makes sure that his particular function is not being starved or overfed.

Role of Targets

Early in December, the budgets are finalized and presented to the managing director, who accepts or rejects them. What usually happens is that the managing director is dissatisfied with the budgets on the grounds that they are too pessimistic, and higher rates of profit and output are agreed with the factories.

The problem in connection with budgeting is to decide whether to put down what you expect will happen, or what you know could happen if things ran well and all the team pulled their weight.

In summarizing the budgets for the main board, the original budgets are shown as "Budgets" and the increased figures as "Targets." In general, the basis of the

targets is to be able to make approximately 10 per cent net profit at 80 per cent of capacity. This, of course, represents a very fine achievement.

The sales, expenditure and trading budgets are the key ones, and once they are established the others are prepared.

Capital expenditure budgets are prepared in detail, showing:

- 1—Existing commitments
- 2—Authorized, but not yet ordered
- 3—Budget for the ensuing year.

All new items have to be justified, either on the grounds of additional profit, new products, or replacement of worn-out plant.

Stock budgets are prepared, based on the expected sales, the state of supplies and existing stocks.

With all the above available, it is not difficult to prepare a cash budget or disposition-of-funds forecast.

Chart or Figures ?

Finally, a balance sheet is prepared showing the expected movements between the beginning and the end of the year.

All the budgets are put on charts; many are semi-logarithmic. This is a matter of personal preference. It is found in practice that some managers prefer charts to figures, and vice versa.

This budgeting, in the case of a company which exports over 70 per cent of its products directly and something of the order of 85 per cent indirectly, can seldom be described as accurate; each month a further forecast for the next three months is prepared, and each quarter a forecast for the next twelve months.

The preparation of budgets and forecasts, while searching and stimulating to constructive thought, is only the start of the control. The comparison of the actual with the budget is the obvious step.

In describing the returns which are received, I am describing what comes to head office; each factory may and does supplement them with returns suited to their needs.

The following are received weekly:

Orders and Invoicing: This is a statement by product of goods despatched and orders received com-

pared with budget. Swift praise or blame follows the receipt of these returns.

Overtime: In case the invoicing is being achieved by a lot of overtime, a statement of the cost of overtime and the number of people involved is prepared.

Material Intake: We attach considerable importance to material intake. A return showing, by various product groups, the value of material received during the week is sent in.

All these weekly returns are ready on the Monday afternoon, made up to the previous Friday.

The first report to be received for the month or period (for convenience, the year is divided into thirteen four-weekly periods) is the financial report. This is designed to answer all reasonable queries on results, in summary form, and is presented to the main board.

Only facts are dealt with in the financial report. Comparisons are made with moving annual totals and with the previous year, but no budgeted or forecast figures are shown. The variances from budgets are, we think, more suitably dealt with on detailed subsidiary statements, and concern the managing director more than the board. The board are not interested in what might have been!

While the principle is that no budgets or forecasts are shown, one exception is made in that a forecast of the next three periods' net profit is given.

The report deals with the following items, in the order shown:

- 1—**Profit** for the period to date. A moving annual total for comparison with the previous year's result, and the forecast for the next three periods to indicate the trend.
- 2—**Invoicing and Orders Received** for the period and year to date. A moving annual total and the previous year's total for comparison. These two items give an indication of the increase or fall-off in business.
- 3—**Bank Balance or Overdraft:** Actual is compared with limit as at end of period.

The adjacent charts, showing performance against target (shown by triangles) are typical examples of the control tools used in management accounting. The data plotted are purely imaginary.

4—**Debtors:** Trade debtors at the end of the period are compared with those at the end of the previous year. Progress claims outstanding at the end of the period are also shown.

5—**Creditors:** At the end of the last four months, and the previous year.

6—**Taxation:** (a) Assessed and due. (b) Not yet assessed, but due whenever assessed.

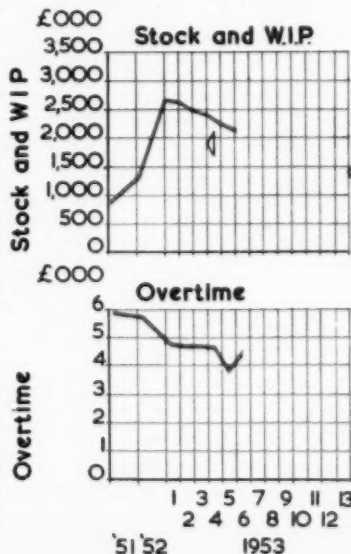
All current tax is included—income tax, profits tax and E.P.L.—but future income tax (at present 1953-54) is not shown.

7—**Stock:** The total stock and work in progress at the end of the period is compared with that at the end of the previous year. The commitments in excess of sales orders are also shown, the stock being included with the commitments because there are some large excess stocks. This last figure is for the previous period, as it is not usually available in time.

8—**Capital:** The expenditure during the year to date is shown, and the commitments at the end of the period are compared with the end of the previous year.

The financial report is ready seven working days after the end of the period. It is supported by an approximate trading statement. This compares budget and actual sales, and shows the variances—volume, material price, revision, controllable.

The overheads are shown in



total for each function, against budget, thus:

Design
Development
Administration
Selling and Distribution.

The final figure is the net profit. The trading statement is also ready seven working days after the end of the period.

The rest of the statements, with the exception of the balance sheets, are in effect detailed schedules amplifying the summary figures in the trading statement. They are:

- (a) Schedules of overhead expenses, compared with budget.
- (b) Schedules of orders received and goods despatched, by product groups. This is a summary of the weekly return already described.
- (c) Operating statements which show, for each factory and for each department, the budgeted and actual expenses and the variations in detail.

The returns are supported if necessary by written reports.

Capital expenditure is scrutinized, and as soon as possible a check is made to see whether the savings actually achieved are in line with forecasts made when the expenditure was authorized.

All the above information is charted on a set of charts for each factory, which have been borrowed largely from the Dupont system. They show the orders received each period, cumulative

orders received, and the moving annual total; and the same for invoicing.

The profits are expressed for the month and the moving annual total against a budget; they are also expressed as percentage earnings on the investment and earnings on invoicing.

Control Value

The factory cost, selling expenses, administration and distribution are all expressed as a percentage of sales, again each month, and a moving annual total against budgets. Stocks, debtors, creditors and overdraft are also plotted against budget, as are the number of employees and overtime. These charts are, in many ways, the most valuable part of the control.

A small statistical section exists at head office as part of the accounts organization. It deals with sales statistics and market research.

All the returns are consolidated and scrutinized at head office, and the managing director has a ring binder into which the returns are put as they are received.

The organization at headquarters is small. It consists of the group controller of accounts and his assistants.

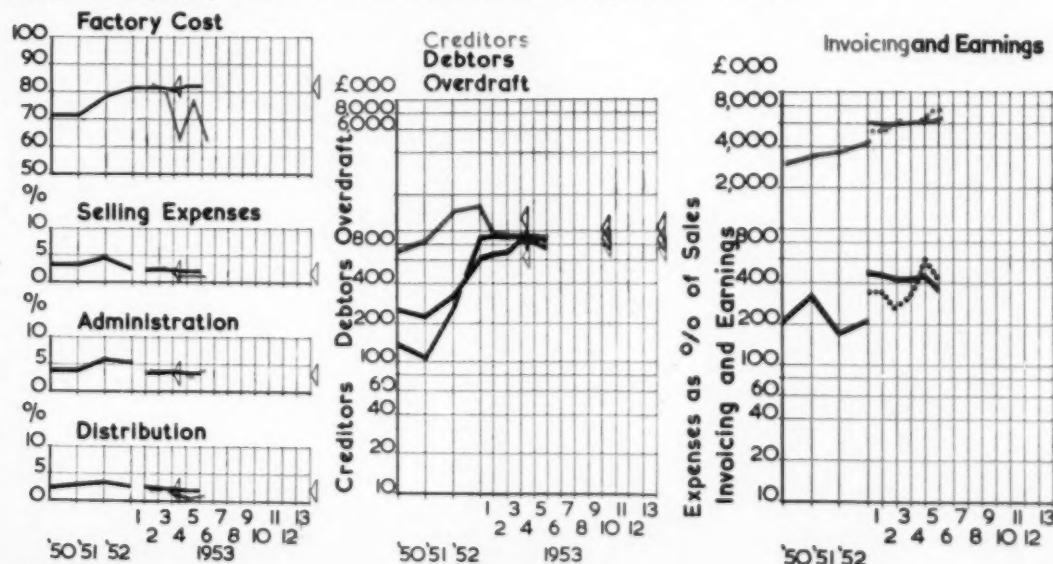
Each factory has a management committee which discusses the returns and sees that the appropriate

action is being taken. Once a period, at each factory, the principal returns are discussed at a local board meeting attended by the group managing director or his deputy.

The consolidated returns are discussed with the functional directors at head office regularly, and any policy decisions required are given. If it appears that the local management is short of suitable staff with which to carry out the necessary action, specialists are sent either from outside consultants or head office staff.

Usually there are one or two items to which the major part of the executives' attention is directed, and which are the subject of memoranda and reports between the various managerial levels. Discussions take place between the accounts department and the foremen, works managers, and the senior executives. A considerable load of responsibility is carried by the accounts department in that the various executives rely on them to give guidance as to which points require attention. Constant effort is made to see that the statements do not become mere routine.

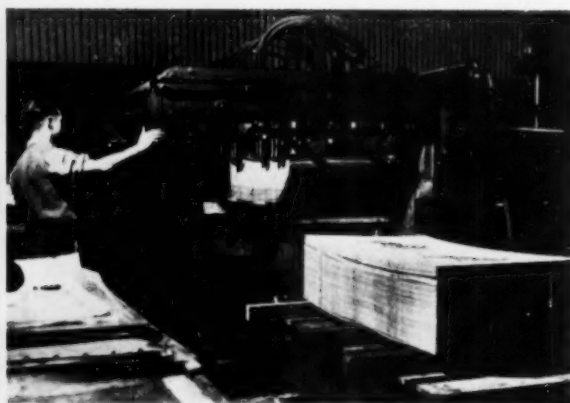
The above is an outline of management accounting in one group of companies. It has, in practice, proved its worth, and is now accepted by management as an essential part of the scheme of things.





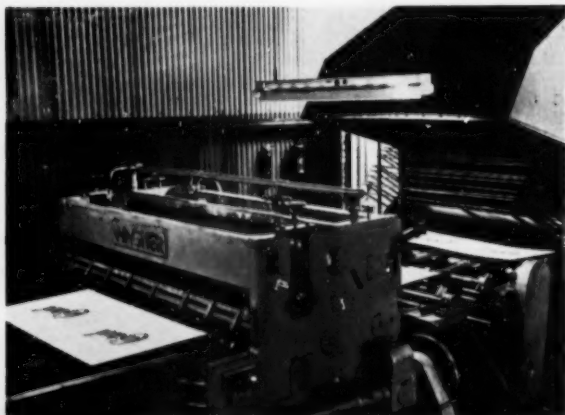
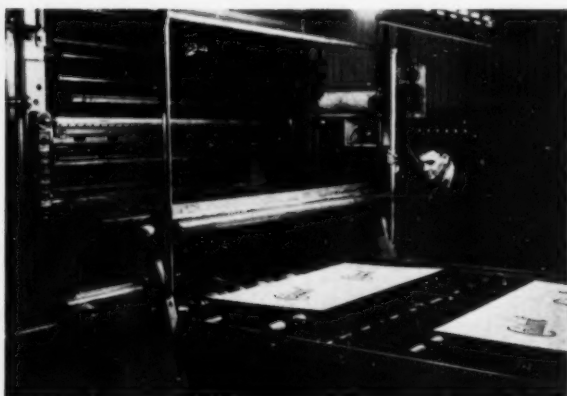
This New Drum Finishing

The latest method of drum manufacture is employed at the Bristol plant of Rheem Lysaght Ltd. Using the Rheemcote process, drums are roller-coated with paint instead of sprayed and multi-colour decorative finishes can be incorporated by offset litho printing. Both these operations are carried out on flat sheet before fabrication. Advantages in production are speed and a saving in coating materials. For the drum user, it means that containers can be "poster finished" and incorporate multi-colour trade marks, house colours, etc., thus opening up an entirely new approach to container advertising and its development.



1 STARTING POINT. Steel sheets, trimmed to size, are brought by fork truck to the Dexter feeder. Feeder monitors the sheets—raising them by suction and magnets—on to the feed table for delivery to the offset litho press. In the picture, sheets have already received two colours and are about to receive their third and final colour.

2 PRINTS ON STEEL. The 72-inch litho press which enables a wide range of decorative finishes to be applied to drums. Sheets are automatically fed through the press and conveyed to the next point on the line. In the U.S.A. a similar production line has handled as many as 4,000 sheets an hour.



3 PUTS A COAT ON. The Wagner magnetic spot coater. When sheets have been litho printed, the applicator roller on this machine is raised and they simply pass through to the convection oven. Spot coater is normally used for applying the overall first colour. After final litho printing, it "wet ink" varnishes the sheets. Wicket conveyor (right) picks up sheets for feeding through the oven.

Process

INCREASES OUTPUT

CUTS PAINT WASTE

GIVES MULTI-COLOUR[®] FINISH

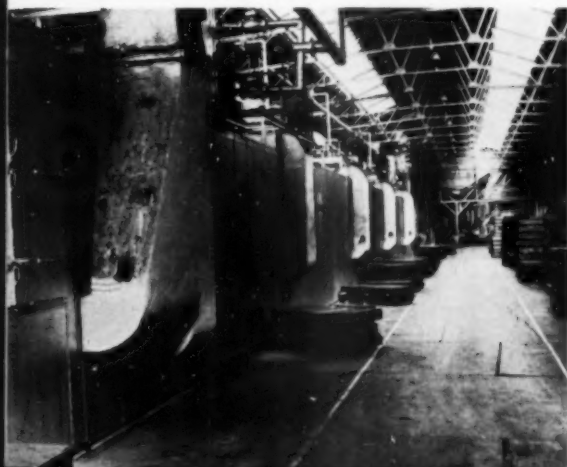


6 FROM SHEET TO CYLINDER. Sheets are vacu-blasted to obtain a clean surface for welding. The body is then rolled to form, edges are lapped and it is spot-welded. Finally it is seam-welded, as shown above.



5 RHEEMCOTE TERMINUS. Sheets are automatically unloaded off the wicket conveyor and taken to another Dexter stacker that re-forms stacks of sheets on stillages ready for transfer to the fabricating shop by fork truck. Starwheel (centre of picture), turns sheets over (so that they are face uppermost) if they are to receive a further printing or coating.

4 COOKING THE SHEETS. The 170 ft. long convection oven which is designed to cover any stoving times and temperatures required. It is arranged for town gas firing and is divided into six separate heating zones; after leaving the oven, sheets pass through a cooling zone. In the background is the fabricating shop.



7 ASSEMBLY LINE. After welding, drums have their ends flanged on machine nearest the camera. The rolling hoops are formed on the second machine, then side openings are incorporated. Next, ends are fitted and double seamed, after which each drum is air-tested for flaws. Finally seam welds and chimes are touched up by spray gun and the rolling hoops receive a protective wax coating.



Photographed for **BUSINESS** by
F. Dunscombe Honiball, A.R.P.S.

members of the team and their foremen, and about steps in promotion and the things that they had done to achieve this advance.

The progress of their fellows was also introduced by such questions as "Do you know of any capable person within your own group who is not being developed fast enough?" And then they were invited to take a punch at management by such questions as "If giving an opinion for the whole group, what would be your greatest criticisms of the things the company does and proposes? Have you any suggestions for overcoming this?" and "How do you feel about ideas you have submitted? Do you get to hear about the results? Why were they turned down; what happened when they were put into use?"

Encouraging Frankness

Questions of this kind go deep into the relationship between an employee, his colleagues, his supervisors, and the management of the company generally. It was, therefore, essential that the answers should be obtained under the most encouraging conditions.

This was achieved by arranging for the questionnaire to be answered during an interview with a new and relatively junior member of the management who had neither authority nor influence over individual destinies. It was hoped by this means to persuade all employees that their answers would not in any way affect their progress in the company or the regard in which they were held by those around them.

Everyone in the firm was questioned and the only variation in the technique was that the top five managers were interviewed by the general manager and not by the junior executive who was responsible for all the other meetings. It speaks well for the staff relationships in the firm that the interviews could be conducted in a friendly way between a young representative of the management and employees of 20 years' standing. The amount of time spent on

each interview varied between half an hour and four and a half hours, representing a loss of 450 production hours. This "loss" was, however, justified by the results. For the forms used in the interviews, though not analyzed statistically, clearly showed certain faults in organization and management. As a result, improvements were introduced that made better use of people's capabilities.

One concern that had always believed in a very loose type of management arrangement drew up an organization chart showing responsibilities and lines of communication. Four cases were found of people who thought they were being underpaid, and in three of them salaries were increased—one by a considerable amount.

Many changes were made in the plant and a form was designed for recording further ideas about technical changes.

Here it should be made clear that the company do not make cash awards for suggestions, because they regard the production of ideas as part of the job; nevertheless they are anxious that the origin of ideas should not be lost, as they are taken into account when considering persons for promotion.

Making a Manager

Further personal problems were brought to light, e.g., one man thought there were no opportunities for promotion. The management pointed out that they did not think he was up to the standard required for change; the individual concerned then "put his back into it" and is now one of the managers. Still another outcome of the questionnaire was the creation of a research and development department with its own equipment. In addition, a generous, non-contributory sickness benefit scheme was started as a result of the combined effect of various points raised during interviews.

An important comment by the management on their first experience of the scheme is that it helped them to anticipate changes and advances. Many of the alterations that were suggested would have been introduced even if the interviews had never taken place.



J. W. DAVIDSON
The man who had to
ask the questions.

'People matter more than profit . . .'

J. W. DAVIDSON, 25-year-old personnel manager of Dexion, Ltd., and Krisson Printing Ltd., was the then junior executive who took the 1951 interviews. He was closely concerned, too, with the compilation of the present staff attitude check list. But the check list, he pointed out—"as with everything worthwhile in the company"—was the result of teamwork for which no one man could take the credit. To BUSINESS, he said:

"You are, of course, describing one minute facet of our personnel policy in highlighting our attitude survey. Our personnel policy is the result of twenty years' intensive practical study. The effect of applying what we have learnt has been cumulative . . ."

"The basis of our company's progress is that people are more important than profit. We cannot expect our staff to look after us unless we look after them. Our working rule is to satisfy most of our staff all of the time, our ideal to satisfy all the staff all the time."

"OUR staff selection is very rigid. The result is that our company, from top to bottom, works as a team . . ."

"Finally, we realise that stagnation of a company is based on the stagnation of the individuals within it."

WORKING UNIT: Office work is divided between small—and highly efficient—teams.

Nevertheless, action was taken a great deal more quickly than would otherwise have been the case and difficulties were shown up that might have grown and become exaggerated with the passing of time. Many individual problems were laid at rest, many improvements were made, and where none was possible an explanation was given. No one was left without an answer.

Always Suggestions

Krisson and Dexion have no personnel department, for every member of the organization is regarded as his own personnel manager. Anybody and everybody is encouraged to go to the next person in authority and say "This is not right" or "I suggest that . . ." The suggestion will then be taken up by the management, whose aim it will be not only to put things right but to put things right in the best possible way. This goes on all the time and would do so even if there were no formal interviews or questionnaires.

The results of the first interviews were so productive that it was decided to make an annual organized review of progress, adopting the same kind of technique with modifications for changes of circumstances. By this time, the number employed in the firm had increased to 240 and it became quite impracticable to interview everybody individually—to do so would have caused the loss of at least 1,000 hours of production time and hundreds of thousands of feet of Dexion angle, to say nothing of output from the printing works.

Revised Version

It was therefore decided to plan the questionnaire in a different way, to circulate it to all members of the staff, and invite their written answers. Provision was made for private interviews where these were requested—and had everyone asked for this arrangement, it would have been adopted despite the heavy loss to the firm.

The new questionnaire or check list was very searching indeed, and although no one was pressed for a reply, there was an almost



HIS CHOICE: *Young men and women are encouraged to learn the jobs which they like and for which they are suited.*

100 per cent response. Some 15 per cent asked for interviews, and although this does not mean that the remaining 80 or 85 per cent of the staff are entirely satisfied with the progress of the company or their own positions in it, the management have had their belief that men are their most important asset well and truly confirmed by the number of answers which indicated satisfaction.

Alternatives

Here are a few examples of the questions asked,* with an indication of the actual method of questioning. The instruction is "Tick the answer or answers which are most near your own opinion" and each question is then put in at least three different ways, e.g., "Is your work varied enough?" (Alternative answers "Yes," or "I would like more variety," or "I dislike being moved from job to job.") "Are you out for promotion?" (Alternative answers, "No, I am very happy in my present job," or "I will take it if it comes my way," or "I am working hard for it.")

*Readers who would like to obtain copies of these questionnaires are invited to write to the Editor, **BUSINESS**.

The questions can be classified under the following headings: (1) Work and working conditions, (2) The handling of ideas, (3) Promotion, (4) Study, (5) Fellow workers, (6) Planning, (7) Consultation and complaints, (8) Welfare, (9) Pay, (10) Leadership, (11) Treatment, (12) The monthly news bulletin.

In addition, administrative personnel were asked about the extent of their responsibilities, whether these responsibilities were clearly defined, whether they had a sufficient authority and scope, and about their relationship with the person immediately above. All employees were given a blank invitation to provide further information, suggestions and criticism concerning the organization.

"Cleared Up"

Results of the second questionnaire were significant. The only suggestions for improvement concerned plant, machinery, office layout and techniques. Only nine people asked for private interviews and all these proved to be upon personal matters outside the scope of the company (which, however, did its best to help).

Management's comment: "Though it is doubtful whether we can claim to have put everything right by the previous series of interviews, most major issues seem to have been cleared up."

MANAGEMENT AT WORK

STANDARDIZING LOADS

THE system of unit loads is being used increasingly by American businessmen for transport by road and rail. So reports a group of experts sent by the Organization for European Economic Co-operation to investigate mechanical handling.

The mission visited several plants which now receive materials from suppliers on pallets in unit loads. The materials are inspected at the supplier's works by the customer's inspector before despatch. On receipt, they are either stacked in storage areas or taken direct to the point of use, the load not being broken until actually required.

Delivery of goods in unit loads is being carried out not only for parts which can be loaded in containers or on pallets, but also for long and bulky loads such as tubes, bars and sheet steel, which arrive as strapped units with wooden supports, to allow lifting without manual handling.

Where containers are constantly being exchanged between supplier and user (e.g., in the case of steel castings and forgings), special types are often designed to suit the particular product being supplied. Increasing use is being made of collapsible types of box pallets, which can be returned to suppliers in compact form at reduced cost. One large firm uses wooden pallets with detachable box sides secured in position by tension wires. When the pallets are empty, the wires are cut and the box collapsed, so that it can be returned as a flat package occupying very little space. Another solution is the use of low-cost expendable pallets made of corrugated paper boards.

RETIREMENT 'NEST EGG'

NEWMAN Industries, Ltd., of Yate, Bristol, have introduced a tax-free retirement "nest-egg" to employees at their Yate and Grantham (Lincs.) factories. A lump sum amounting to £415 could be earned by a man of 22 who joined the scheme now.

A. J. Newman, chairman of the company, says: "In our own particular corner of free enterprise

industry, we are trying to give a person who serves our company with the best years of his life something better to look forward to than just his State pension."

As an example of benefits under what Mr. Newman called "our own plan for helping towards ensuring freedom from want amongst employees at the time when they will most need help—in their old age," he showed that a man aged 35 who had been with the firm ten years and stayed until he was 65 would get a tax-free sum of £350.

The firm is bearing the whole cost of the scheme. Every employee on the works payroll who has reached the minimum age limit and put in qualifying service by September 1 will be eligible for a "nest-egg" based on years spent with the company.

HARVESTING BY R/T

THE short-wave radio telephone, which the old-time farmer would have scorned as a "new fangled" device, is playing a vital part in bringing in Britain's 1953 harvest.

Agricultural contractors in Worcestershire, Hertfordshire and Essex, have fitted short-wave R/T on their machines, on the trucks in which they travel between jobs, and at their depots.

Now, if they want to switch a man or a machine quickly from one job to another they just pick up their 'phone and call Jack or Tom sitting on a combine harvester or a tractor in the middle of some distant field.

Gordon Walker, of Pebmarsh, near Halstead, Essex, spent £600 to install one fixed and three mobile sets and estimates it costs £100 a year to maintain them.

"But," he says, "results are astonishing. Emergencies arise in harvesting and I am able in a moment to switch a man or a machine from one job to another. Farmers are astonished at the saving of time and money this system means to them."

F. L. Sabatini, secretary of the British Agricultural Contractors' Association, which has nearly 1,600 members, says: "This is a tremendously important development in our work. In the battle

of the harvest, getting to a job quickly may mean the saving of a crop worth perhaps hundreds of pounds. More and more of our members are planning to go in for R/T."

YARDSTICK FOR IDEAS

RESearch and development work is essential if industry is to keep abreast of competition. But money spent on research can easily be frittered away if management lose control. And Lord Baillieu, chairman of Dunlop Rubber Co., Ltd., recently laid down five fundamental conditions which will make a new idea or new discovery a success.

These are:

1—Will it cheapen a product which is in demand?

2—Will it substitute a cheaper product for one which is in demand?

3—Will it improve quality in relation to cost, i.e., give better value for money?

4—Will it supply a need at present unfilled, and, especially,



LORD BAILLIEU
Critical eye on ideas

will it attract the customer by enabling him, in turn, to save time, money or effort?

5—Will it reduce dependence on imported materials?

And Lord Baillieu added the cogent query: "Can we say that our research programmes are suffi-

MANAGEMENT AT WORK

ciently keenly reviewed in terms of these hard tests?" He was speaking at the third conference of industrial research directors and managers organized by the Federation of British Industries, the report of which (3s. 6d.) has just been published.

DECENTRALIZED COSTS

W. BARRATT and Co., Ltd., of Northampton, are one of the largest firms in their industry, employing about 900 workers and producing some 16,000 to 17,000 pairs of boots and shoes a week. Most managements working on this scale find it difficult to get the man on the shop floor to take any interest in costs. Barratt's, however, have succeeded by a policy of decentralizing their costing system.

Each room in the factory works as an economic unit. The supervisor is expected to keep a check on his own costs. He is given details of overhead costs, labour costs, and raw material costs, and is expected to keep abreast of them. After the labour costs have been established for any particular style, a slight readjustment of cost is allowed either way.

A discussion is held once a week between the foremen, the cost accountant and the factory manager to give consideration to the costs of each department. As a result, whenever labour is borrowed from one department by another, a careful account is kept and mutual adjustment made.

Ninety per cent of the operatives in this factory are on piece-work, compared with only 50 per cent three years ago. There is also an over-all profit-sharing scheme for the staff.

ALL HEROES TOGETHER

WISE words on how to get co-operation from subordinates were given to the research conference by H. C. H. Graves, chairman and managing director, Vitamins, Ltd.

"No man," he said, "is a hero to his valet, but every man is a hero to his children, to his sweetheart and his wife. Now, when a man enters your works, your labora-

tory, or your department, do not reduce that hero to a cipher, whatever his role. When he left his children 20 minutes ago, he was a hero. The least we can all do is to treat him, and see that he is treated, with courtesy and with the proper dignity appropriate to his role, his existence as a man—a man as we are.

"This is still too often neglected and the neglect of it could be taken to epitomize the reason, the main reason, for such happenings as strikes. Those men who struck when the research director's dream was introduced were the same men who fought to the last man in the sand dunes of Africa



H. C. H. GRAVES
Morale needs facts

when they were outnumbered and surrounded and the same men who fought until the ship sank under them in the Atlantic. Why, then, should they behave differently now? Is it conceivable that this is because their captain, their officer, was a hero to them and their present leader is not? Could we do anything to see that their present leader is just as much a hero to them as their captain was in the Atlantic, or the subaltern in the deserts of Africa?

"What practical steps do you take about this? Fair dealing, yes, but what is the good of fair dealing if it is not known to be fair dealing? What is the good of any of these things if they are not known and recognized? That is

the practical point to which I think attention is still not sufficiently given. You must, therefore, have an adequate chain of information.

"It should be the responsibility of each 'commander,' each 'supervisor' in our phraseology, at every level right from the top to the bottom, to see that the facts are explained to, and understood by—that is vital—all those responsible to him. . . ."

FACTS ON OVER-65's

SHOULD retirement at 65 be compulsory for all workers? When an American concern, Daystrom, Inc., set up a management committee to investigate retirement problems in the firm, its members thought so. But their experience made them change their minds. And, as a result, the company have introduced a flexible retirement scheme.

The committee listed all individuals 65 years of age and over, and studied all the known facts about each. Where retirement appeared desirable, further facts were collected as needed, and plans were made to talk to the individual with the purpose of eventually "selling" him on the idea of retirement.

But in many other cases, investigation showed that the over-65's were still doing a good job of work. And in such cases no move was made to retire them compulsorily.

Results of the plan were summarized by an official:—

1—All employees whose physical condition and work performance indicated the desirability of retirement have been persuaded to retire, voluntarily.

2—Older workers leave feeling they have been treated in a fair and friendly manner, and the company have enlisted the approval and loyalty of fellow workers.

3—The plan has not been costly in terms of efficiency. Of 58 employees over 65, 6 are above standard, 27 are doing a normal job, and only 25 performing at a level below the normal. These represent only 1½ per cent of the employment group, and their cases are currently under review.



Journey to Success —by Motor Coach

By ROBERT SPARK

FOR generations Robert Barr's family had been farmers, but he decided to break with tradition. At the age of 14, he left his father's farm and went to Leeds to learn engineering. It was a good decision, for today Robert Barr is chairman and managing director of the Barr and Wallace Arnold Trust Ltd., who own Wallace Arnold Tours and who now have a turnover of over £1 million a year.

He received the first lesson of his business career when, as a five-shillings-a-week apprentice, he had to put some spokes in a bicycle wheel. The result was a buckled wheel—and he realized that you must *know* how to do a job properly and concentrate on whatever line of business you are following.

"Before you can assume the management of anyone," he says, "you have to be able to work with them, understand them and be able to do the work they are doing equally well. Your knowledge of the business must always be greater than that of those working under you—and you only achieve this by concentration, study and experience."

Spare-time Start

Mr. Barr's desire to have his own business came early and was first satisfied by starting, in his spare time, to repair bicycles (after he had learned how to fit spokes without buckling a wheel, of course). After the inevitable period of saving, the big day came in 1912 when he bought a chain-driven motor lorry and started on his own.

The firm of R. Barr—with their one vehicle—were ingenious.

The story of Robert Barr, chairman and managing director of the Barr & Wallace Arnold Trust Ltd., might well be entitled: "How to run coaches and handle people"—because he has made a success of both these activities. Starting with one vehicle in 1912, he now has a fleet of 250 and a business with an annual turnover of over a million pounds.

During the week, the lorry was used on freight work, but at week-ends it was converted into a charabanc. This was work he liked, because he had a strong urge to show the city-dweller the beauties of the countryside and on these trips he would stop by the roadside and describe the scenery to the passengers—thus foreshadowing the present-day "conducted tour."

After the interruption of the Great War, he carried on, steadily increasing his fleet, and in 1926 he formed R. Barr (Leeds) Ltd. In the same year, on the day the general strike started, he purchased—for £800—Wallace Arnold Tours, which had two vehicles.

The following year, he segregated his passenger and freight interests; all the passenger side was concentrated under Wallace Arnold Tours, while R. Barr (Leeds) Ltd., became purely freight. Turnover at this time was about £15,000 a year and the payroll—25—was small enough for Mr. Barr to exercise personal control over the various aspects of the two companies. In any case, he believes in letting people get on with their job without management interference, and that holds good today with the vastly increased size of the organization.

With his policy of leaving the staff alone is linked belief in



ROBERT BARR
First lesson—a buckled wheel

loyalty to the company. Mr. Barr attaches great importance to it, for he believes that a man should work because he likes the people he is working for, rather than because he is afraid of losing his job. It takes many years to build up the right spirit in a company and these early days set the standard at the same time as they provided him with valuable experience. As he remarks: "You have to have the right technique and approach to get company loyalty. Fortunately I had particularly good training in the early days."

In the early thirties, further

expansion took place and more companies were bought. The reason for buying other companies, rather than expanding his own firm, was connected with the licensing arrangements. With the firms he bought came their licenses to operate on different routes—an essential for expansion.

Further acquisitions were made in: 1935, 1936 and 1937, and in every case the employees were absorbed into his own business; but it was a case of buying buses, men and licences—he never took over staff from the management side.

First Company

In 1937, Mr. Barr had reached the stage when he could go no farther without the help of a considerable amount of capital. Up to this point he had built up the company from his own finances—by ploughing profits back into the business. He had gone as far as an individual could do with the bank, so it was then that he formed the Barr and Wallace Arnold Trust Ltd., as a public company.

Between 1937 and 1939, more small companies were absorbed. By the time war came, he had a turnover of £150,000 a year and about 100 vehicles. In a sense, he was ready for the war. His buildings, including a vast garage in Leeds, were new. His vehicles were all of recent manufacture and

he had standardized on two leading makes—a policy which he has always maintained.

During the war, vehicles were either on essential work or requisitioned. In 1945, Mr. Barr started planning in readiness for a return to normal conditions. There would be no new coaches available immediately, so the fleet was rehabilitated in their own workshops. In 1943, he had—very shrewdly—bought a body-building firm in Leeds, so that he was able to repair the ravages of war-time service and even build completely new coach bodies for his fleet without having to go to outside firms.

The problem of hotel accommodation for passengers on the coach tours was not so easy, but he partly surmounted this difficulty by buying two hotels in Torquay. Since they were purchased, over £50,000 has been spent on modernization. He recalls how, on at least one occasion, he went to Torquay on business and had to seek accommodation elsewhere because both his own hotels were full.

Re-equipment

Gradually the organization was able to resume its normal role, although it took four years to recondition the coach fleet and it was not until 1949 that new vehicles became more freely available. Between 1949 and 1952, £300,000 was spent on new coaches. This was not a simple case of the neces-

sity for additional vehicles, but part of Mr. Barr's policy that every coach which has Wallace Arnold Tours on it must be the last word in appearance and mechanical efficiency. Today the 250-strong fleet consists mainly of luxurious underfloor-engined vehicles, all kept in immaculate condition.

Post-war Expansion

During the last eight years, expansion has continued and more companies have been bought up. In 1946, the acquisition of Home-land Tours, of Croydon, gave them an entry into the London area, and since then one or two other south-of-England firms have been purchased, strengthening their hold in that part of the country.

The only loss has been the freight business which was taken over by British Road Services in 1949. Whether it will be regained when road transport is denationalized is a question that Mr. Barr, as yet, cannot answer. The idea of buying back his own business with the possibility of losing it again if the government changes is one which must be worrying others in the same field.

The actual operation of the coaches can be divided into three parts: express services, excursions and tours. The tours range from seven days in North Devon (£17 per person) to an 11-day tour of Switzerland (£48).

For British tours, they use 400 hotels and spend £400,000 a year with them. This side of the business started when Wallace Arnold Tours was acquired in 1926. Now, as in the past, Mr. Barr regularly visits the hotels—without advance notice—to see if they are maintaining the standard he requires. On arriving, the first thing he does is to visit the kitchen, because cleanliness is, to him, a first essential. The kitchen is also a good place to judge the over-all standards of a hotel.

These visits also give him the opportunity to mix with some of his tour customers without them knowing who he is. In this way, he learns their likes and dislikes, or their reactions to their driver

TOURS FOR SALE: Whether it's a day trip or 11 days on the Continent, Wallace Arnold's have something for the customer



(invariably favourable) and gets some idea of their motives for selecting that particular type of holiday. He can also discover why they decided to "go Wallace Arnold"—whether it was through an advertisement, personal recommendation and so on.

All this information is invaluable for future planning as it would be little use running the tours if they did not fit the economic and recreational needs of their potential customers. Mr. Barr readily admits that Wallace Arnold tours are not cheap and they must, therefore, be of a high standard, fully inclusive and give value for money. From the hundreds of unsolicited testimonials they receive—they come in practically every day—it is quite plain that very few customers are



1922

Day trip by "chara" became a part of the British scene in the twenties

1923

Hard tyres, bulb horn, a box-like body and a tendency for the radiator to boil



disappointed. All these customer letters are seen by Mr. Barr and every one of them is answered.

To be able to make these visits and keep a personal eye on customer relations, and at the same time look after the business side of the firm, requires delegation. This is where Mr. Barr's original policy of picking the right man and letting him get on with the job plays such a big and successful part in the running of the organization.

Inevitably the company, like so many others in Britain, have also become involved in the drive to earn dollars. In 1950, Mr. Barr took one of his latest and most luxurious touring coaches to the U.S.A. and exhibited it in New York. This piece of initiative resulted in 200 American and Canadian tourists booking Wallace Arnold tours. Last year, the figure jumped to 1,000; this year—with the added attraction of the Coronation—the total will be even higher. Next year, bigger business is expected and already advance bookings are heavy.

Tours for American visitors are designed to suit their requirements. A typical example is a 39-day "package tour" of Europe. Coaches meet passengers at Prest-

1925

Progress—but the bus still has a strong family resemblance to the railway carriage



1953

Newest in coach fashions — the latest Leyland. Engine under the floor, air conditioning, radio, luxury seating and all the gadgets that today's tourist wants—and expects



wick airport, take them through Scotland, England and all over the Continent, finally depositing them at Schipol airport, Amsterdam, ready to fly back to the U.S.A.

To get the dollar business, Wallace Arnold's have over 400 agents in the U.S.A. and this side of the business, together with the Continental tours, is the responsibility of Mr. Barr's son, J. Malcolm Barr, who is assistant managing director. Mrs. Margaret Hook, Mr. Barr's daughter and also a director, looks after the organization of accommodation, the planning of the tours, and negotiations with caterers and hoteliers.

Man at the Wheel

Fundamentally, the business is built on people—the passenger on the one side, the coach driver on the other. He must not only be a skilful driver but a knowledgeable guide, a good mixer, and well

endowed with patience and tact. Here, skill and ability are needed to pick and keep the right type of man for the job. That is why Mr. Barr places such great importance on personnel and "man management."

"To get the right relationship, you have to understand them thoroughly and you have to build up a reputation for being fair and just," says Mr. Barr. His policy is to keep his employees as long as he can so that the older men form a solid core which helps to "sober up" the more impetuous youngsters who join the firm.

Mr. Barr finds it increasingly necessary in modern business to take the men into one's confidence

and he maintains that most employees like to work for a company that is going ahead and is a leader in its particular field. This is good, not only because it improves employee morale, but because it also keeps management alert.

Of course there are times when the men have their grumbles and are dissatisfied but, Mr. Barr says, "I'd rather see them individually than let them take their troubles to a shop steward. Men make mistakes and so does the management. I don't think that sacking a man is the remedy for an evil."

By adopting this liberal but firm personnel policy, the company have a reliable and contented corps of drivers. "They have to be trained, they have to be trusted, they have to be encouraged, they have to work a seven-day week when on tour, they are my drivers . . . and my salesmen," is how Mr. Barr puts it. And his last word on the subject? "You can't get to understand men at a university or a training school—you must work with them."

Among the essentials of management he stresses the importance of costing, and the ability to consider carefully but to decide quickly, and to be able to relax outside the business. Of his own success, perhaps the biggest clue to it can be found in the Latin motto which appears on every one of his coaches: *Nothing in industry is impossible.*

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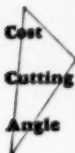
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Work Study Speeds a Housing Scheme

Building is an industry with distinctive planning problems. This is a case history of a "family" firm of builders in the Midlands who are using new tools—time study and method study—to increase the efficiency of their organization, to cut overhead costs and to gain more effective control of their labour force. On the Sledmere estate, Dudley, where they are building 236 houses, John McLean and Son Ltd., of Coven, Staffs, are establishing planning methods and incentive principles which will be applied, in time, to all their operations.



By ALAN PETERS

JOHN McLean and Son, Ltd., a progressive "family" firm, are at present building on five sites in the Birmingham-Wolverhampton area. Their labour force totals about 350 men.

One of their sites, Sledmere, is being treated as a work study "nursery." McLean's believe that they are the first building firm in the Midlands to employ professional consultants for this purpose, and one of the few firms in the country to apply the principles of work study to a contract which involves as many as 12 types of house built to specifications drawn up by a local authority.

Work study, in this case, has two major applications: time study and method study. The first has already established a flexible system of incentive payments which not only speeds production in itself, but also gives the firm more effective control of their labour force. The second is being

used as a basis for planning work and materials handling.

Development of the Sledmere site began six months ago. Since the new principles are being applied, step by step, as work progresses, it is not yet possible to measure overall results. But McLean's are confident that they are (1) developing a faster building rate; (2) reducing overhead costs by increasing the proportion of productive man-hours to actual hours worked; and (3) overcoming the lack of planning which, they believe, slows down many housing schemes.

Earnings and Output

The workmen's earnings—now an accurate reflection of actual production—are exceeding normal daywork rates by at least 50 per cent; some men are earning as much as 225 per cent. The panel on page 70 gives a specific example

of the effect of work study on individual operations.

One fact which makes the application of work study data more difficult here than under normal factory conditions is that building labour, even at supervisory level, is almost invariably "casual." In charge of each site is an agent, who directs gangs of skilled men and labourers through a number of trade foremen. These men are engaged for specific operations, and the lack of "continuity" in the labour force emphasizes not only the need for realistic incentives, but also the difficulty of persuading the workmen to accept new rate-fixing standards.

McLean's have found in the past that neither of the generally accepted methods of payment is entirely satisfactory. The payment of agreed daywork rates means inadequate control of the labour force; piecework rates, based on existing data, are too inflexible to take fully into account changes dictated by working conditions or the availability of materials.

Time study has introduced a



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PREFABRICATION: Roof timbers are cut in the carpenter's shop and assembled into complete trusses before they are taken to the houses for installation

more flexible principle. Operations which had previously been treated as entities for the purpose of rate-fixing are now broken down into components. These components are studied individually by the work study estimator, who fixes standard times for them. Adding the component times together produces an accurate "target" for the complete operation.

From the data thus established it is possible to synthesize targets on a mathematical basis. If there are changes in methods, materials or working conditions, the firm no longer have to try to re-rate the complete operation; any component affected by the changes is deleted, and a new one, time-studied on its own, is inserted. The time allowed for the complete operation changes, but standard times for its "elements" do not change unless the conditions under which the work is done alter.

Time-studied targets are sufficiently sensitive to allow adjustments to be made for changes in the weather. During the six months since the development of the Sledmere site began, McLean's have been steadily compiling data

which will cover all contingencies.

A tendency of the fixed piece-work system is to perpetuate "slack" targets because the men fear that the basic rate for the job will be reduced if they earn too much. Time study overcomes this difficulty by allowing the firm to present a series of guaranteed targets for which the basic rate will remain the same, however much earnings rise. The men receive a true incentive bonus equal to the difference (at normal rates) between the time in which they complete a job and the target fixed by the estimator.

Overheads Cut

Overhead costs are thus reduced on the simple principle that—where output and earnings are directly related—it is cheaper to employ two men earning 50 per cent over the standard rate than three men earning only the standard rate.

An example of the flexibility of the new system is the use of light metal angle beading on the interior brickwork surrounding windows, to facilitate plastering. If plasterers were paid at a fixed rate

per room, it might have been impossible to negotiate a new rate for the job, and the "improvement" would thus have represented an additional cost. Time study, however, enabled the target to be adjusted immediately.

The "mechanics" of the time-keeper's office are straightforward. Job cards, indicating the standard time among other instructions, are stamped with "time started" and "time finished" against the names of the men concerned. To complete the picture, the men "clock" on and off waiting periods between jobs.

Linked with the incentives system are special bonuses for the trade foremen, based on the quality of the finished work which they have controlled. These bonuses are calculated on a points basis, one point (worth sixpence) being allotted for each of 30 key measurements in each house.

The importance of this arrangement is that the time spent on a job by the men of one trade is affected by the quality of the work which precedes theirs. If, for example, the brickwork is out-of-true, the carpenters and plasterers will waste time in an attempt to compensate for the original error. Thus the foremen's bonus scheme is one step towards co-ordinating the work of individual trades.

Teething Troubles

It was inevitable that time study should achieve its results more slowly on a building site than it normally does when applied to clear-cut production sequences in a factory. Three weeks passed before the first target was produced; and even after that, men were working alternately under two payment systems, daywork and incentive—an arrangement which created uncertainty. But these teething troubles are now over; the men's confidence has been won, and at present 95 per cent of all productive work is done on guaranteed targets based on time study data.

In winning that confidence, McLean's have appreciated the importance of explaining to their workers the difference between time study and ordinary rate-fixing; of telling them when time study and method study are being carried out; and of avoiding any impression of "snooping." But



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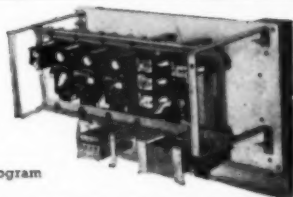


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14 OPERATING BRANCHES THROUGHOUT THE U.K.

the essential quality, they have found, is perseverance.

In one case, men who had previously been allowed 110 hours for a roofing job were reluctant to accept a target of 90 hours for a similar job on a smaller type of house. McLean's stuck to their assessment, however, and when the men found that they could still earn a substantial bonus their objections ceased.

Duplicated job cards (including the standard time allowance) are used for some regular jobs, like unloading and stacking bricks, gently emphasizing the point that the rate is guaranteed irrespective of any marked increase in earnings.

The one failure has been with the bricklayers. McLean's were unable to overcome this trade's insistence on the accepted principle of a fixed rate per 1,000 bricks. But a fresh effort to do this will be made when work study is applied to the next site.

Bricklaying, in fact, demonstrates a drawback of arbitrary incentive rates. Obviously, less effort is needed to lay 1,000 bricks forming a blank wall than a similar number incorporating doorways, windows and chimney-breasts. Yet the reward, on the present system of payment, is same in both cases.

Workers Stay

By other trades, time-studied rates are generally approved. An indication of this approval is the labour turnover (usually high where so much casual labour is involved). Only six of the 100 men employed on the Sledmere estate have left since the work began.

McLean's believe, however, that the development of greater efficiency in the building industry depends primarily on the management. In building operations there is no close parallel with the normal manufacturing sequence of: design—drawing office—production department—work bench. Thus McLean's aim is to find more efficient means of bridging the gap between the architect's original designs and actual work on the site, and to avoid leaving the solution of production problems to men whose trade experience exceeds their organizing ability.

Their methods are direct. Com-



Job Time Cut By 41 Per Cent

Setting up moulds for pre-casting concrete lintols

TYPICAL example of the effect of work study on building operations on the Sledmere estate is a saving of 41 per cent in "time allowed" to cast concrete lintols. Time study originally showed a rate of 1.56 man-hours per lintol. Reorganization of the work reduced this to 0.92 man-hours. Bonus earnings for lintol casting now average 75 per cent. Thus the actual production rate is between 0.5 and 0.6 man-hours. Reorganization, by method study, was effected in four simple ways:

- 1—Originally, lintols were cast as they were needed. Putting the work on a proper production basis enabled a concrete mixer to be used.
- 2—It was found that an inadequate supply of hand tools meant time wasted in fetching and carrying. More tools were provided.
- 3—Blunt blades in the bar-cutter caused unnecessary work in cutting reinforcing bars. Now blades are inspected regularly and replaced as soon as they show signs of bluntness.
- 4—Double-handling of the lintols after casting—from casting slab to a temporary stack and from there to the houses—was avoided by loading direct to a lorry for distribution to the houses.

prehensive working plans are drawn up from the architect's designs. Precise lists of materials needed are drawn up and carefully "codified" on the plans. Method study is being used to eliminate wasteful operations, to see that the right materials are delivered at the right place at the right time, and to avoid skilled tradesmen having to perform work which can be delegated to labourers.

"Flow" principles are being established wherever possible. An example is the pre-assembly of roof trusses. When roofing timber (already codified) is delivered on the site, the joists are taken directly to the houses concerned, but the other timber passes through a mechanized carpentry shop, where it is cut accurately to size and assembled into complete trusses. Prefabrication on this scale is also applied to other work,

such as the casting of concrete lintols and chimney heads.

Work study data enable operations to be planned with more certainty than before, and the functions of different trades to be co-ordinated more efficiently.

The firm are now recruiting methods engineers who can apply and develop these principles. They seek men who combine trade experience with organizing ability and can thus work in close collaboration with site supervisors.

By increasing the efficiency of their organization and by cutting costs, they hope to be able to restrict their future activities to a few selected areas, where they can draw on a labour pool already experienced in their new methods. The effectiveness of the incentive payments system, McLean's hope, will help to establish "continuity" of labour by keeping good men "on ice" until they can be employed.

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'Home Design' Was Their Answer to Storage and Packing Problems

By A. G. THOMSON

The problem of Kiddicraft Ltd. was to handle a large volume of miscellaneous orders, with limited staff, in premises which were small in relation to output. Efficient organization and equipment built to their own design provided the answer.

SPECIALIZED products need specialized selling, and this presents special problems in packaging and dispatch. In the case of Kiddicraft Ltd., these problems are aggravated by the limitations of existing premises. Component stores, assembly and finishing, packaging and dispatch, are situated in three small buildings, separated from one another by distances of up to a mile. This necessitates the use of a motor van to transport components and completed toys from one department to another. Despite these difficulties, a high level of productivity has been achieved, due to efficient organization and to the construction of storage racks and benches for packing and assembly, which have been designed to meet the factory's special needs.

Mr. Hilary Page, designer of all Kiddicraft toys, has written several books on the subject of toys for children, and is an acknowledged expert in this field. The company concentrates on the production of "Sensible" Toys (its trademark), which provide a sequence of educational playthings keyed to the logical requirements of every stage of early childhood from three months up to six or eight years old. Every product is constructed of the highest quality plastics or wood, and is made to last. It is not the company's policy to bring down costs by economizing to the detriment of design or workmanship, and it is on quality and reputation that the toys must sell.

Presentation is, of course, highly important, and considerable trouble is taken to make the boxes as attractive as their contents. The pictures on them are produced by a well-known artist, Eileen Soper. Nearly all boxes are wrapped in transparent sheeting, and in each one is a miniature catalogue and a card with particulars of the company's monthly photographic competition.

In order to follow through all stages of distribution, from factory to end buyers, the company acts as its own wholesaler in the home market by going direct to retailers and appointing stockists, of which there are some thousands on its books. The small man expects, and has always been offered, the small lots which he requires. Kiddicraft toys sell throughout the year and many stockists order regularly once a month in small quantities. The packing and dis-

patch staff has therefore to cope with a continuous flow of orders, each for small quantities of widely assorted goods.

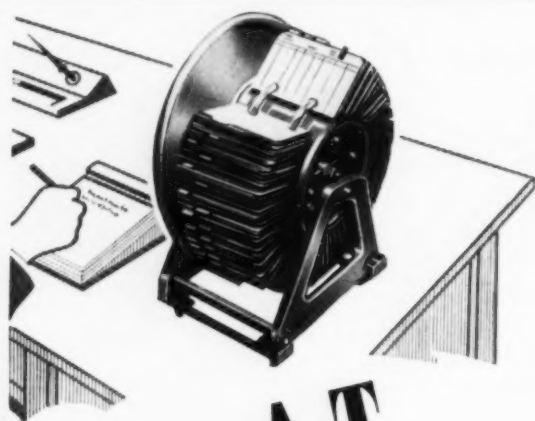
About half the company's production is for export and is shipped to some fifty different countries, in most of which are stock-holding agents dealing directly with retailers. A high percentage of the export trade goes to Canada. There are associated companies in the United States, France and Germany. Firms handling Kiddicraft toys overseas range from large wholesalers in Canada to small importers in West Africa, Aden, Sarawak. The company makes its own export arrangements and supplies overseas agents in quantities to suit the requirements of the particular market.

In view of the steady all-the-year-round orders from home and export customers, it is necessary to carry comprehensive stocks of every product and to store them in such a manner that they are conveniently accessible to the packing staff and can be drawn from readily. Shortly after the war, accommodation for the packing and dispatch department was provided in a new, entirely un-

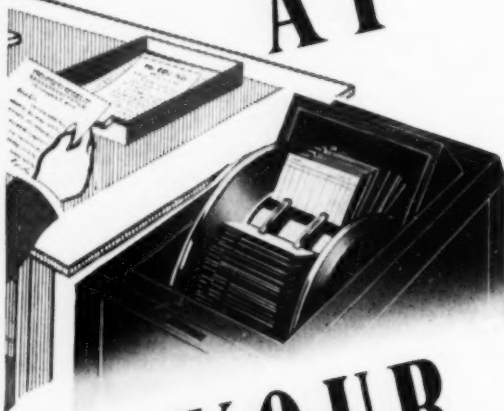
Continued on page 117



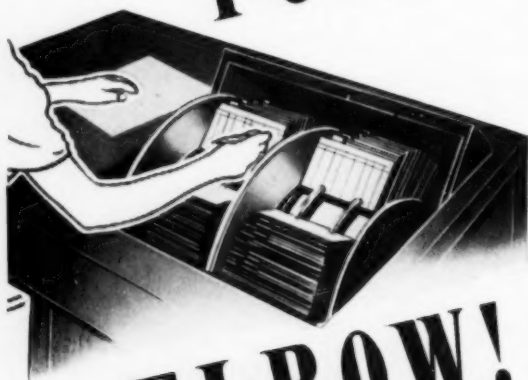
TOY EMIGRANTS: The export dispatch department of Kiddicraft Ltd., Kenley



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How to Control a Nation-Wide Force of 'Casual' Workers

By FRANK G. CASEY

DOOR-TO-DOOR distribution of literature and samples is probably as old as advertising itself. Yet until very recently it was impossible to find anyone who could undertake to do this work on anything more than a very local basis—and even then material was quite likely to end in a drain or a dustbin.

It was to remedy this situation that Circular Distributors, Ltd., were formed in 1951. In only two years, this firm have built up an organization that can undertake the distribution of leaflets, samples, etc., in any town in Great Britain. Perhaps more important, they guarantee that the material really does reach the householder, and they have thus gone a long way towards restoring the reputation of this form of advertising.

Organization has been the basic ingredient of this success. Thorough organization has been applied to all the operations of

the company, which fall under four main headings:

1. Recruitment, supervision and payment of a nation-wide (and largely part-time) labour force.
2. Setting in motion the procedures for distributions.
3. Operation of office systems for the control and direction of work "in the field."
4. Preparation and maintenance of a library of street maps of



Any labour force that is widely dispersed presents management with serious problems of supervision, control and direction. Circular Distributors, Ltd., of Liverpool, have faced and solved these problems—which, in their case, were aggravated by the fact that their workers were "casual" and were only employed as work was available. Here is a description of the methods that have enabled this firm to establish a nation-wide labour force in only two years, and to control and direct them with certainty "in the field".

all the large towns in the country. There are lessons to be learned from the company's activities in all these fields, so it is worth treating each one in detail.

Recruitment, Supervision and Payment. Most of the distributors are housewives; they have proved to be the most reliable and conscientious of "casual" workers. They are recruited as follows:

Advertisements are placed in local newspapers. When replies are received, each applicant is sent a simple form and a booklet. On the form are given such details as address, usual occupation, details of experience, age, etc. The booklet describes the work, the way it is organized, and the conditions of employment.

When the forms are returned to the head office in Liverpool, they are filed in town order in loose-leaf books. This "employment register" is a résumé of labour which is drawn upon as teams are needed for that area.

Supervisors (who must have cars) are recruited in the same way and are in charge of teams, each of four distributors. They are usually retired people—often former Army officers and civil servants. Their job is to organize their teams, check that circulars, etc., are properly delivered, keep workers supplied with material, make daily reports to headquarters, and forward workers' wage claims and tax forms.

Employees claim their wages and travelling expenses each week on duplicate forms. These are checked by the supervisor and forwarded to the head office. They all arrive on the Saturday morning and workers receive their pay in cash by registered post by the Wednesday morning at the latest. The duplicate wage claim form is enclosed as a check.

Special accounting procedures

[illegible][illegible]

In addition to the distributors and supervisors, there is also a small number of inspectors, each responsible for the area into which the country is divided. Inspectors, unlike the other workers, are mobile and go from town to town

2 Procedure. When a job is to be done in a given town, a standard procedure is adopted. First the team is selected from the employment register for the town. A duplicated form is then sent to each distributor, asking if she is available on the appropriate dates. The supervisor gets a similar form, but he is also required to give a place where he will meet his team, and a description of his car so that it can be recognized easily.

When the replies are received in Liverpool ("by return" is the rule) replacements are selected for those not available. Once the team has been finalized, the supervisor and the others receive their instructions—also on a duplicated sheet. The supervisor is given the names and addresses of his team and those of two reserves whom he may contact direct if necessary. Leaflets and samples are usually

Once distribution has started, the supervisor sends a daily report on a pre-printed post card to head office. Shown on this are the number of distributions made that day, the map sections covered, details of the weather and the time (if any) lost as a result of weather conditions. A similar, though fuller, report is made weekly.

An overall picture of the way in which work is progressing is thus available for comparison with pre-set targets.

There are three of these charts, one each for the South and North of England and one for Scotland. Each chart is divided vertically into sections representing the weeks in the year. Down the left-hand side is a list of towns (with populations of 5,000 and over) in alphabetical order.

Mapping pins in five colours are used as signals. A blue pin represents a definite booking for a team, a yellow pin indicates that the booking is definite, but the date provisional. Red and green pins show when a team is on or behind schedule, and black ones indicate when inspections are due or have taken place. Other information (such as the number of leaflets, etc., which have been or should be distributed in any week) is pencil-written in the appropriate square.

Cross-checking

Last of the wall charts in the office is, in effect, a summary of the larger town-by-town board. It shows the state of the contracts in hand for a year. Details of place, etc., are omitted, but the client's name replaces the town name down the left-hand side. Thus an immediate cross-check between a particular week and a client shows whether any work is in hand for them. If a red pin appears in the square, work is *on* hand for that week. A green pin shows that the work is in hand — i.e. the teams have been alerted.

4 Maps. These maps are the fourth major prop on which rests the success of Circular Distributors' work. Suitable maps did not exist, so the firm had to prepare their own; a huge task, even though large-scale Ordnance Survey sheets were used as a basis. At first a scale of 2 $\frac{1}{2}$ in. to the mile was used, but lately a change has been made to six inches to the mile.

Preparation of a town or district map from the Ordnance Survey sheets is governed by the practical demands of the work. Local authority boundaries are "straightened out" where necessary along the nearest clear physical feature, so that they shall be recognisable on the ground as well as on the map. The map is subdivided into areas, each containing approximately one day's work for a single team. The subdivisions are numbered to indicate the sequence in which teams must cover the district; this makes it a simple matter to follow progress or to locate a team "in the field."

Master copies of the completed maps are filed in the planning office. Copies of the maps are

One copy of the map goes to the supervisor of the team, another to the inspector for that area, and the third to the client, who the knows exactly what is happening and can make his own checks if he wishes; he is, in fact, encouraged to do so. Supervisors have permanent instructions to mark any new housing estates and other developments on their maps. When maps come back to head office at the end of a distribution, these alterations are noted, checked and incorporated on the master copies. Circular Distributors' maps are therefore often more up-to-date than those of the Ordnance Survey.

All these systems were devised and perfected by the firm themselves. Although a great deal of time, effort and capital have been sunk in setting up this complex organization, Circular Distributors are certain it has been worthwhile. They are now in a unique position to undertake nation-wide distribution of advertising material, and have introduced certainty where all before was doubt.

OCTOBER, 1953



This System Keeps Down Dictation Costs

AN interesting and practical system of dictation - by - telephone has been devised by the Organization and Methods department of Unilever Ltd.

The procedure is that letters are dictated over the internal telephone system to a central point where they are automatically recorded and then transcribed by typists. This idea is not new, but other systems suffered from the disadvantage of extra wiring between the central recording point and the extensions. With Unilever's design, no additional wiring at all is required and the existing internal telephone system is used. The system, called *Dialer*, was

By JOHN BROADBENT

patented and is now being manufactured and marketed as a commercial product by the firm who co-operated in its development.

Basically, the equipment consists of (a) remote control units which are easily attached to the extensions of any normal type of internal telephone system, and (b) a central control unit which is attached to a telephone and a dictating machine in a typing pool.

The number of "dictating extensions" per central dictating machine varies with the volume of work handled, but a six-to-one ratio is the present estimate of normal needs.

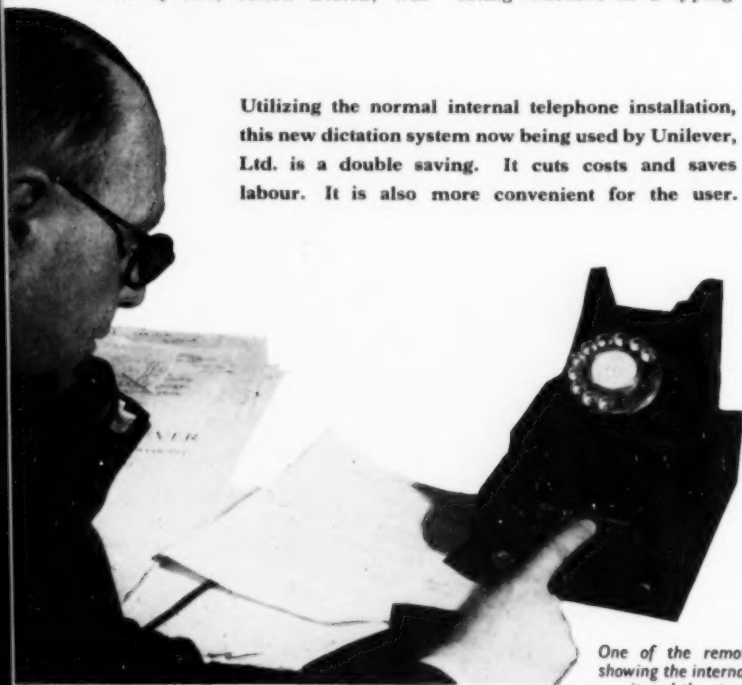
For their full-scale tests, one of Unilever's associated companies volunteered to act as guinea-pig. Here, six internal telephones (which were used by some sixteen people) were equipped with remote control units. A *Dictorel* recording machine, with a central control unit, was installed in the typing pool under the control of one girl, who changed the *Dictogram* (the magnetized paper recording medium) and dealt with the transcription.

Alterations necessary for installing *Dialer* are few. Each remote control unit has to be wired to a mains power point, and the internal telephone cable (Unilever do this at the point where the cable is fixed to the wall). The internal telephones themselves remain unchanged and they are, of course, available for ordinary calls.

The *Dictorel* machine used is the standard model with small modifications. It is housed on top of a trolley with the central control unit beneath it. The control unit is connected to the telephone system by a coupling unit.

The operation of the equipment is quite simple. The remote control unit (which is only 10in. by 7in. and 3in. high) has four buttons, a switch and a pilot light. The dictator switches on and the

Utilizing the normal internal telephone installation, this new dictation system now being used by Unilever, Ltd. is a double saving. It cuts costs and saves labour. It is also more convenient for the user.



One of the remote control units, showing the internal telephone above it and the operating buttons



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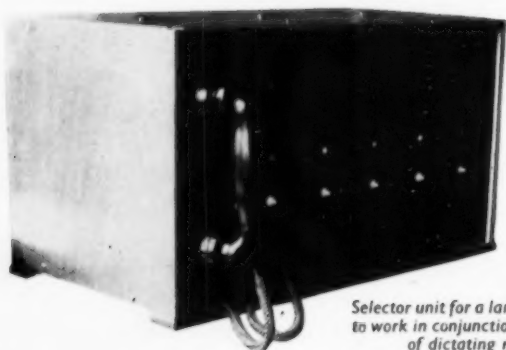
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Forms for Typewriters



Selector unit for a larger installation, to work in conjunction with a battery of dictating machines

pilot light glows, indicating that the equipment is ready for use. He then dials the dictating service number and, if the line is disengaged, he is automatically connected to the control equipment (a low, continuous note proves the connection and indicates that the central machine is in the "stopped" condition). If the machine is in use the normal "engaged" signal is heard.

To start dictating, he presses the "record" button and the tone note stops, indicating that the dic-

tating machine is in operation. To avoid gaps in his dictation, he uses the "stop" and "record" buttons in the usual way. The tone note always confirms when the recording equipment is stopped.

To listen to what he has dictated, he presses the "playback" button. One sharp depression causes the machine to play back the last 15 to 20 words. Sustained pressure back-tracks the machine at about 60 words per second to any required point for play-back.

Alterations can be made by

locating the beginning of the sentence or passage to be altered and re-recording over it. The new recording automatically replaces the original dictation. A distinctive warning signal of three pips is heard half a minute before the end of each record.

Where special instructions are necessary, these can be given verbally to the operator, who can be contacted by using the "call opera-



Central control unit, with the magnetic dictating unit above

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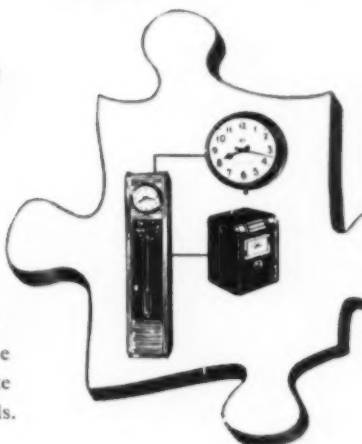
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tor" button. The pressing of this button automatically stops the machine and switches it to play-back position.

On the selector unit there are two coloured lights. As soon as an extension starts dictating, a green light appears and remains on until the dictator has finished. When he replaces his receiver, a red light shows. This tells the operator that the recording is finished and that the Dictogram must be changed. While either the red or green light is on, no other extension can get through to the machine.

Distance No Object

Distance is no object and the equipment can be used wherever there is an internal telephone system. For larger installations, a different type of selector unit has been devised to work in conjunction with a battery of dictating machines. This unit incorporates a series of relays, which, when it receives a call from an extension, "searches" for a dictating unit that is not in use and automatically connects the dictator. Only if all

Corner of the typing pool, showing normal dictating arrangements and, on the right, the Dictorel machine mounted above the central control unit



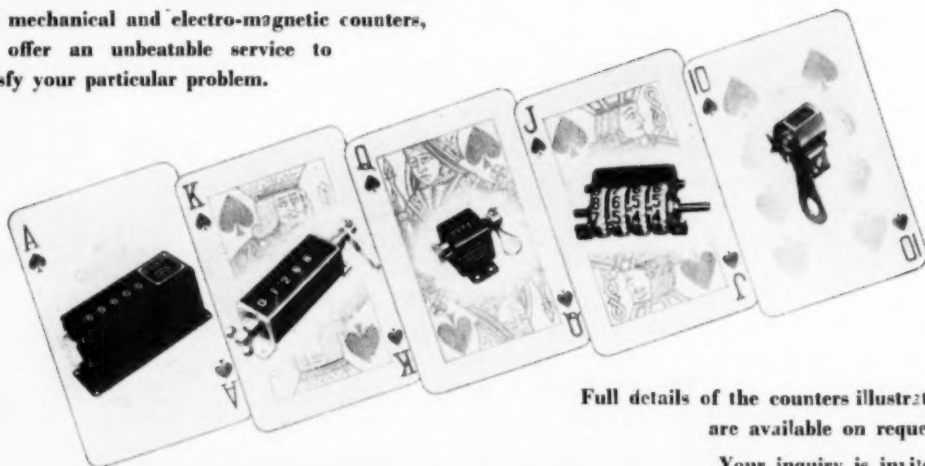
the dictating machines are in operation is the "engaged" signal given.

The front of this selector unit resembles a small telephone switchboard. If the "call operator" button is pressed by a dictator, the operator will see the appropriate white light appear and plug in her telephone to that particular line. At present, Unilever have an experimental control unit for five dictating machines, but any number within reason could be used.

For handling the dictation of groups of staff, the Dialer system appears to offer a solution to the problem of how to provide dictation facilities for a moderate expenditure. The experience gained by Unilever, Ltd., with the pilot installation has been satisfactory enough for them to go ahead with the equipment in other sections of their organization. By the end of this year, Unilever (including their associated companies) hope to have 120 extension units and 20 central control units in operation.

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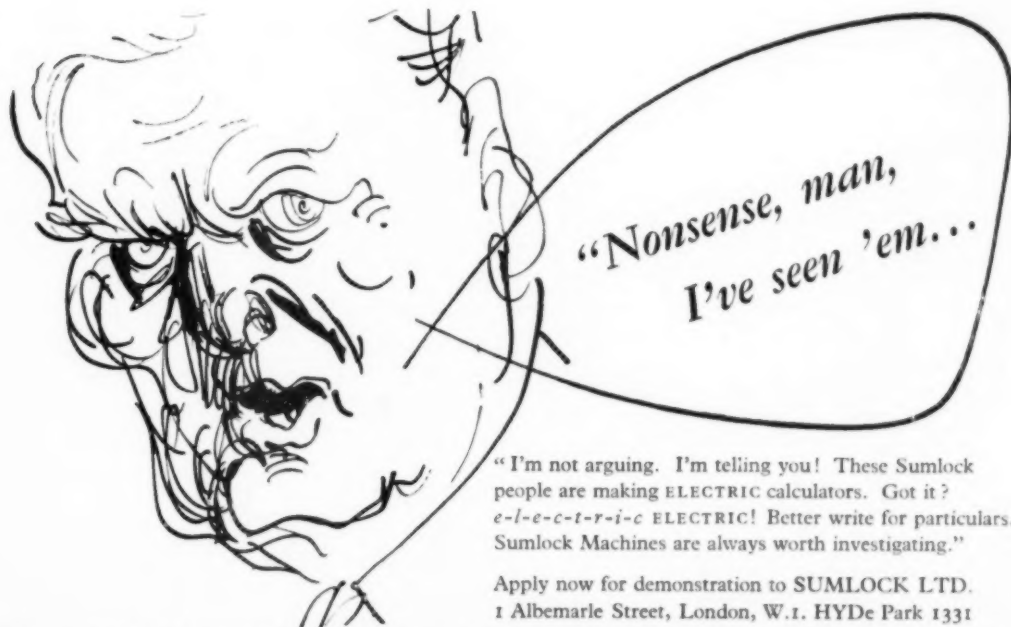
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Items to be summarized are usually pre-printed on forms with the total columns on the extreme edges. By overlapping a number of forms so that these columns can all be seen, items can be cross-cast and totals obtained.

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Cost Cutting Angle
Cutting Office Costs
 REDUCING office expenditure is not easy, but here are a number of ways of cutting stationery and correspondence costs and saving filing space:—

1—Cut down stationery costs by:

- (a) Eliminating unnecessary copies of forms.
- (b) Ceasing to use specialized stationery.
- (c) Taking copies of replies on the backs of incoming mail.
- (d) Having short-run printing jobs duplicated instead of printed.
- (e) Giving someone the task

of checking the design of all forms used in the office.

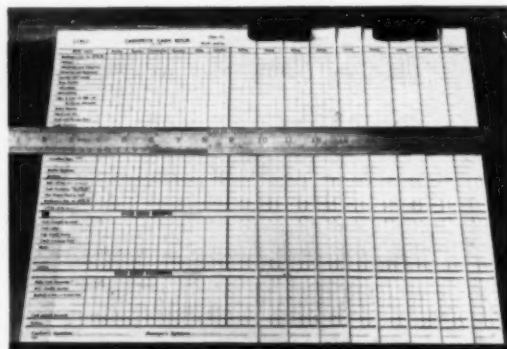
2—Reduce time and cost involved in correspondence by:

- (a) Greater use of internal and local telephone services.
- (b) Using reply form memos.
- (c) Setting an example of brevity.
- (d) Using dictating machines.
- (e) Eliminating all unnecessary covering letters.

3—Reduce filing space by:

- (a) Ceasing to file papers

Continued on page 119



Keeping the figures straight. The magnet board showing the metal strip and, at the top, two magnets keeping nine sheets of paper in alignment

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Plan for Welfare Before You Build

THE erection of good manufacturing buildings and properly-designed warehousing space does not complete the modern factory. To them must be added adequate welfare facilities and other amenities which help to make work in the factory more pleasant.

The importance of the canteen has already been dealt with (*BUSINESS*, August, 1953). This article will consider other welfare facilities which are an important consideration in any large-sized industrial unit.

The first of these is medical treatment. The extent of medical facilities in a factory varies considerably with the number of persons employed and the type of work carried out. Some factories need provide only arrangements for first-aid treatment for injuries received during working hours; others will require facilities for examination of staff before employment; a third scheme embraces both routine examination of workers and general medical treatment.

A large factory with many

By EDWARD D. MILLS, F.R.I.B.A., F.R.S.A.

The modern factory must be regarded, not only as a production unit, but as a place where men and women spend a large proportion of their lives. Facilities for "welfare" in the broadest sense are therefore an integral part of the new building—and decisions upon both their scope and detail should be taken at the planning stage

employees may cater for all types of treatment under the control of a full-time medical officer with nursing staff. At the majority of small industrial units, adequate services can be provided by a nurse who deals with minor casualties, while a local doctor visits the works to examine new employees.

It is essential that the medical centre, whatever the scale of accommodation provided, should be sited in an accessible position with direct access to the main

road and easy communication with all parts of the factory.

Where extensive welfare facilities are provided, a medical centre can be planned in conjunction with the canteen and personnel departments to form an attractive group surrounded by gardens. For first-aid treatment, it should be sufficient to provide a small building or part of a building containing a separate waiting-room for men and women, with lavatory accommodation, an office for the nurse-in-charge, and a small women's rest room. There must be ample cupboard space for the storage of blankets, equipment and medical supplies. Constant hot water is also essential.

Provision must be made for stretcher cases to be taken from the treatment room direct to an ambulance without passing through the waiting-rooms; to allow easy passage of stretchers, doors should have a minimum width of 3ft. 6in.

Where routine examination of employees is carried out, provision for this should be kept separate from the first-aid department. Additional waiting-rooms will be required with changing

AS IT SHOULD BE : The well-planned medical centre at the Frigidaire division of General Motors, Stag Lane





TWO WAYS WITH CLOTHES: Independent lockers for normal clothing and for working clothes at pit-head baths (above) cleverly-designed hangers (left) permit well-ventilated storage of outdoor clothes
Courtesy of James Sieber Equipment Co. Ltd

booths, each about 4ft. square, curtained off from the examination rooms.

Where eye-testing is to be done, a clear dimension of 20ft. is necessary in one direction of the examination room.

Whatever scale of medical treatment is envisaged in the factory, the buildings should be simple in arrangement, and it is essential that they should be well-lit, well-ventilated and easily cleaned. Rooms should be light and pleasantly decorated, with adequate heating and surfaces which do not attract dirt. To avoid dust accumulation, the corners of walls, floors and ceilings should be coved; and floors should be surfaced with a warm and resilient material such as cork tiles or heavy quality lino.

Combined Unit

It has already been suggested that personnel departments can be related to medical units. The advantage of this can be easily seen when the medical examination of new employees is a routine matter. It is preferable for the personnel department to be housed near the factory entrance. The amount of accommodation provided will again depend upon the scale of the department. The requirements will include a series of rooms which can be used as waiting

rooms, offices, small interview rooms and testing rooms where practical and psychological proficiency tests can be carried out. Sometimes the personnel department will deal with welfare for the factory in general. In such cases, separate offices and waiting rooms should be provided with their own lavatory accommodation, so that the two separate functions of the department do not become confused.

A variety of other types of welfare facilities may be provided. Many employers are prepared to spend large sums on welfare development work, the scope of which may include sports fields, space for indoor games, dances and entertainments, and training schools either at the factory or in conjunction with education authorities.

It is the architect's function to see that all these amenities are properly related to the factory they serve, and that buildings are not only suitable for their purpose, but add to the appearance of the factory, giving it scale and human values. It is therefore essential that, when a new factory is being designed, all welfare facilities and amenities should be envisaged at an early stage of development and allowance made for the necessary buildings, even when it is not possible or desirable for the whole programme to be put into operation at once.

Pre-planning of this kind will ensure that in later years it will not be necessary for the sports field to be taken over for production purposes, or some amenity greatly prized by the employees converted into manufacturing space, simply because sufficient forethought had not been given to the problem of factory development.

The provision of sanitary accommodation in factories is, of course, a necessity, and not, strictly speaking, a matter of "welfare"; it is included in this article because too often the level of industrial lavatory accommodation is so low as to make it almost unhygienic.

The Factories Acts require proper provision for sanitary accommodation in all factories and for cloakroom accommodation in most. Even when cloakroom accommodation is not required by law, adequate provision for the safe-keeping of workmen's clothes during working hours is necessary for the convenience of both employer and employees. This is of particular importance where overalls or protective clothing are worn.

Cloakroom Planning

The four essentials of cloakroom planning are: First, adequate changing space, which should include seating accommodation; secondly, separate locker, clothes-peg and storage space, adequately safeguarded against pilfering, for each employee, clearly labelled with the owner's name and number; thirdly, provision for the drying of wet clothing; and fourthly, a building which can be kept clean with the minimum of work, with good lighting and ventilation, and arrangements to ensure adequate supervision.

Factory cloakrooms should be adjacent to the entrance of either the factory or manufacturing building and should be planned for one-way traffic, with lavatory accommodation adjoining. A wide variety of clothes' storage containers is available, including lockers, hanging racks, suspended cages and the ordinary clothes-peg. Choice of the particular type of fitting will depend largely on the area in which the factory is built and the personal preference

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Warmed by Disney humour and peopled with delightful cartoon characters such as the kindly intellectual "Common Sense" and the cold-ridden "Common Man," this amusing film has been greatly successful wherever shown. Full of fun and imagination, it is also scientifically accurate, pointing out clearly the Do's and Don'ts of the all too common "common" cold. Children and adults alike will find it memorable.

Approx. 12 mins.

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This film combines the dignity of plain speaking with an atmosphere of warmth and ease. It shows how accurate knowledge helps to create a healthy attitude and also stresses the care a girl should take during menstruation. Its touches of warm humour and plain common sense dispel fear and impart an attitude of respect to this essential part of the life process.

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FOR ALL HANDS: One solution to the problem of hygienic hand-drying is the continuous towel machine (above)

Courtesy of Initial Towel Supply Co.

The circular washing trough (left) is easier to clean than individual basins, uses less water.

Courtesy of North Thames Gas Board

of the factory manager. It is essential, however, that certain basic principles should be observed. Whatever storage arrangement is selected, it must be capable of taking hats, coats, footwear and personal belongings; should preferably be capable of being examined without opening in the case of lockers, and should be designed so that it is adequately ventilated and can be warmed for drying purposes in wet weather.

Washable Floors

All cloakrooms should be kept absolutely clean, and materials for their construction must be chosen with this in mind. Floors should be of a hard and impervious surface, easily washed, such as tiles, terrazzo or granolithic screed. Floor drainage should be provided and walls should be surfaced with glazed brick, tiles, or cement glaze—all of which can be easily cleaned. Other items of importance include bins for newspapers and other waste material and recessed mat wells at entrances.

Washing accommodation, which must be kept separate from cloakroom space, can be provided either by means of individual lavatory basins, circular washing troughs or continuous washing troughs. These fittings should in all cases be securely fixed. Troughs have several advantages over normal lavatory basins. They can be produced in cast-coloured terrazzo or in metal, and the water

is supplied at a controlled temperature through a continuous spray operated by a foot-lever. It has been found in practice that this type of fitting is not only easier to keep clean than the standard lavatory basin, but also uses less water. The circular type of trough is from 4ft. 6in. to 5ft. in diameter and accommodates six to eight people at one time; it can be provided with connections for upward and downward water supply. A mixing valve to blend hot and cold water can be incorporated.

The provision of soap in works' lavatories is something of a problem. In tablet form it is easily lost or stolen. The most suitable alternative is liquid or powdered soap dispensed by one of the many patent soap dispensers. These can be either self-contained or run on a complete system by which

soap is carried by pipeline from a central storage tank.

Another problem is towels. Ordinary roller-towels need frequent changing. An alternative is individual hand towels, either of paper or cloth, which are used once only and then deposited in special bins, the cloth ones being laundered and the paper ones destroyed. This arrangement is expensive. Automatic roller-towels are popular and efficient, and are generally regarded as an economical solution. They consist of a continuous roller-towel, 25 yards long, in a locked cabinet. The user pulls the towel before use so that the dirty section rolls up and a regulated length of clean towel becomes available. The towels can be renewed daily and have a considerable life.

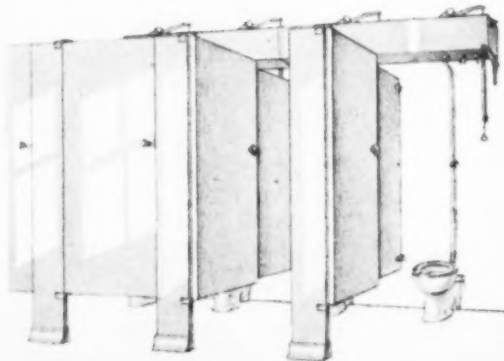
Hot-air dryers are becoming increasingly popular in factories and completely eliminate the towel becomes available. The ally operated and have been widely used in the United States for some years.

In some industries, the Factories Acts require the provision of baths for employees working on certain tasks, and many factories provide showers for work-people employed on dirty work. It is generally found that women prefer plunge baths and men shower baths. Both types must be planned in separate compartments to allow for privacy with space for dressing. A shower bath will need a space of approximately 3ft. by 4ft., a plunge bath is from 5ft. 6in. to 6ft. long and 2ft. 4in. wide. In a shower bath, the shower rose should be shoulder-height and be fitted with a suitable control-mixing valve.

Drinking water from some

ECONOMY of water supply and rapid refilling are advantages of the flushing trough serving a bank of W.C.s

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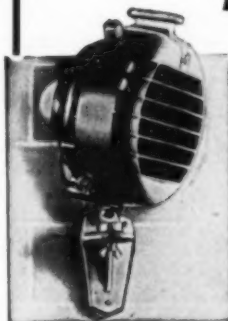
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approved source must, under the Factories Acts, be provided at convenient points in any factory. The cloakroom provides suitable location points. The supply should be clearly labelled and available through a proper type of drinking fountain instead of the old-fashioned and unhygienic chained metal cup. It is, however, important that a tap should be fixed adjacent to the drinking fountain so that people who wish to fill a container with drinking water can do so with ease.

It has already been suggested that sanitary accommodation should normally be planned in conjunction with cloakrooms and washing facilities, but in many large factories it has been found desirable for additional small sanitary blocks to be scattered at convenient intervals throughout the works.

Although sanitary accommodation should be normally on external walls to provide adequate natural lighting and ventilation, where this is not possible it can be artificially lighted and ventilated providing adequate conditions are

maintained. Wherever accommodation is adjacent to workrooms, a properly-ventilated access lobby must be provided to separate the two units. If W.C.s adjoin cloakroom or lavatory, the dividing partition should extend to the



AFTER WORK: On the sports field of the Ford Motor Co. Ltd., Dagenham

ceiling and the two rooms should be separately ventilated.

W.C.s should be planned in rows so that drainage services can be economically arranged. The dividing partitions should be 6ft. 6in. to 7ft. 0in. high, raised 6in. above the

floor to allow for floor washing, with a minimum width of compartment of 2ft. 6in. The tops of doors should be at least 6ft. 6in. from the floor and their bottoms 6in. from the floor, with a space of not less than 2ft. 6in. from the edge of the W.C. seat to the inner facet of the door. All W.C. doors must be fitted with inside fastenings, coat-hook and toilet roll-holder. For economy of water supply, continuous flushing troughs have much to commend them, and in a large lavatory unit the fact that they re-fill rapidly is a considerable advantage.

Walls, floors and ceilings to sanitary accommodation should be surfaced with a hard-wearing and easily cleaned material, of one of the types mentioned above. The floor should be capable of being hosed down, and the detailed design of the area should be specially considered in relation to cleanliness. In women's lavatories, gas or electrically fired incinerators should be installed. These occupy little space, but require a flue to take away the products of combustion.

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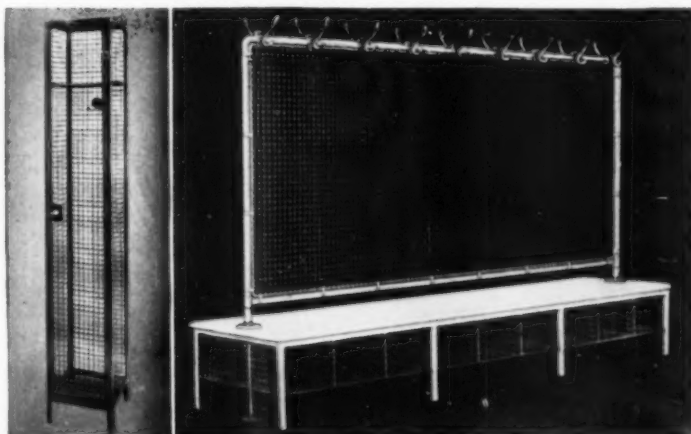
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Overall Opinion...

"They've tried a few tops on these tables, one time or another!"

"I reckon this plastic stuff beats the lot though."

"What's it called, Jim?"

"Well, as a rule I'm only interested in the food but I couldn't help asking what this is, seems it's called 'DECORPLAST'."

"There's quite a lot of this plastic sheeting about — you see it everywhere nowadays — suppose it's all the same?"

"That's just where you're wrong, Bill, the manager was saying that this is by far the best in all respects."

"Who makes it?"

"Holoplast Limited, and I reckon they know as much about this kind of thing as we do about metal!"

"You're right there — I've seen the Holoplast walls in the new 'admin' block."

"Well I think it's lovely, in fact when I get married I'm going to have it in my kitchen!"

"Trust you Mary, you always want the best — don't you?"

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Policy Column

Imagination on the Menu

CANTEEN meals compare very favourably, on the whole, with restaurant meals costing several times as much. But where they often fail is in the eye-catching finishing touch—the original juxtaposition of one food with another.

The works canteen needs such touches even more than the commercial catering establishment. Day after day, its customers sit at the same tables, facing the same people and looking out of the same windows. Obviously, the canteen which puts imagination on the menu is likely to be more successful than the one which does not.

Imagination shows itself in many ways: in menu-planning, in the plating-up of dinners, in the choice of salads and sweets, in the dressing of counters, even in the actual wording of menu cards.

It makes cheap foods more popular, and gives a fresh appeal to old favourites. It attracts pennies which would otherwise be spent at fish-and-chip shops and ice-cream stands.

If these suggestions seem vague, here are practical—and inexpensive—examples which even the smallest canteen could adopt:

Celery-tops used to garnish a dish of sliced cold bacon; melted cheese on toast, sprinkled with coarsely-ground red pepper; pats of "parsley butter" at 1½d. each to put on grilled fish; a pickled walnut or pickled onion on a portion of cottage pie; cheese and apple sandwiches; flowers on the service counter; the eternal "paste jar" salt cellars painted in bright colours; invisible hair-nets ribbon-threaded to match waitresses' overalls.

Imagination is, of course, an intangible quality. Almost everyone possesses it to some extent. But so often it is overwhelmed by such mistaken instructions as "They don't like anything new" or "It's no use trying anything fancy".

Admittedly, these remarks are true in some canteens and half-true in most. But where new dishes and ideas are tried out, it is surprising how quickly customers are persuaded to "have a go" at even unlikely items—provided, of course, that the general quality of the food turned out has won their confidence.

Unrealistic Prices Put the Canteen 'In the Red'

By WINIFRED McCULLOUGH

Senior Canteen Adviser, Industrial Welfare Society

THE main factor which pushes the canteen accounts "into the red" is charging an uneconomic price for two-course cooked meals. This widely held opinion is very firmly underlined by the Industrial Welfare Society's third survey of canteen costs, performances and prices, in which more than 150 canteens provide detailed information about the actual food costs of their main meals.

Over the past seven years, the prices of all commodities purchased by canteens have been rising constantly. In some cases, increases have been gradual; in others, sharp. The combined effect is that canteen expenditure in trading period after trading period has shown an appreciable increase.

Generally speaking, of course, the sale of cakes, snacks and beverages is regarded as less important to the workers' health than the sale of main meals, and for this reason the former are sold at more or less "realistic" prices. The prices of dinners, on the other hand, have crept up reluctantly in some cases and not at all in others.

It is as true as any generalization can be to say that if a canteen meal is to cover all the costs associated with preparing and serving it—labour, fuel, cleaning materials, laundry bills, crockery replacements, etc.—it must be priced at twice the cost of the raw food.

Now look at these three examples taken from the survey. They all represent "good average" canteen dinners, no richer in ingredients

A survey of 150 canteens of all sizes shows that in most cases the prices charged for main meals are barely sufficient to cover raw food costs. Although tea and snacks sold at more realistic prices struggle to restore the balance, net result is that subsidies are higher than ever.

or larger in portions than the normal standard in industrial catering:

Example 1

A small light engineering works in the London area.

Menu	Food cost	Price charged per portion
Roast beef, potatoes, cabbage & peas, gravy	8.52d.	8d.
Steamed roll and syrup	2.4d.	2.5d.

This canteen has a daily turnover of approximately £15, of which £9 represents dinners. However good the percentage of profit on cakes and tea, the "dead weight" of a dinner sold at less than its food cost removes any hope of a recovery rate sufficient to help materially with labour costs.

Example 2

A medium-sized food factory in the Home Counties.

Menu	Food cost	Price charged per portion
Boiled ham and dumplings, mashed potatoes, boiled onions and white gravy	11.4d.	1s. 2d.
Stewed apricots and custard	5.25d.	4d.

Here the daily turnover is about

£30, of which £17 represents dinners. With the larger trade in cakes, beverages, etc., and the slight gross profit on the main meal, a healthier position is reached.

Example 3

A large brick works in the Midlands.

Menu	Food cost per portion	Price charged
Roast beef, Yorkshire pudding, boiled potatoes, cabbage and gravy	7.17d.	1s.
Steamed jam pudding and custard	2.03d.	3d.

Daily turnover is £115; takings from main meals £74. This canteen covers most of its costs—certainly all prime costs.

In the I.W.S. survey, a main course consisting of roast beef, potatoes, Yorkshire pudding and a second vegetable varies in food cost from 7½d. to 10½d. (ignoring one or two extremes). Steamed pudding, with jam, syrup or fruit, varies in food cost from 1.25d. to 3.8d., the lower figure coming from a small canteen where on more than one occasion I have seen reasonable portions of plain but very good food.

A rather disquieting feature of the report is that the raw material percentage is not always relatively small in the cases of large canteens, despite the fact that they have advantages in buying and also in their ability to pay more experienced butchers, storekeepers, etc.

The medium-sized canteen comes out highest in these costings. It is this type of establishment which, I believe, tends both to serve the best meals and to have the greatest organizational difficulties.

The small canteen has a clear costs policy, and the whole business of buying, cooking, dealing with left-overs and taking care of stores is in the hands of one person. On a different scale, the large canteen must be equally business-like, as so much money is involved; it can afford a buyer, a skilled butcher, a chef and a store-keeper, and the manager's salary is sufficient to attract an experienced and successful caterer.

Between these extremes lies the medium-sized canteen. Its manager cannot afford to employ qualified assistants, yet the job is too big to be under the eye of one person.

Incidentally, the lowest price

charged for dinner and sweet in the 150 canteens listed in the report is 7d. and the highest 1s. 11d. Average food cost works out at 9.63d. for a main dish with two vegetables and gravy.

The picture which it presents is that very few canteens sell their

main meals at prices which make possible the recovery even of raw material and labour costs. Large sales of cakes, snacks and tea at realistic prices help in some cases to redress the balance; but, on the whole, subsidies cannot fail to be higher now than ever before.

Check-list for Cold-weather Menus

COLD-WEATHER menus will soon be appearing in canteens—an excellent reason for making a careful inspection of all items of equipment which are used more consistently in winter than in summer. Here is a check list of important points which are sometimes overlooked:

Steamers. Is the "packing" on the doors in good condition? Does the ballcock operate correctly? Is the waste outlet free from grease and "fur"? Are the shelves sound and smooth-running?

Sieves, pudding moulds. Are they undented so that the contents

can be turned out cleanly? Are they hygienic in all respects and free from rust?

Hot plates. Is sufficient hot-plate accommodation available for the winter trade? Are the plates in good condition, the gas jets clean, the steam jets unimpeded, the doors smooth-running, the tops free from rust?

Soup and vegetable boilers. Some of these will have been out of commission during the summer. Check baskets, linings and tap valves.

Hot water boilers. Although these are in use all the year round, the demand on them is heavier in winter. Check the efficiency of thermostats; see that pipes and taps are free from "fur." See that the water is delivered actually at boiling point.

China and cutlery. Take physical stock of all light equipment, and order enough replacements to take care of the bigger winter trade. Now is the last chance to send cutlery to be resurfaced, knives to be ground, saucepans, etc., to be retinned.

Linen. Mend where possible; discard where too far gone, and bring stocks up to strength.

Temperature of dining rooms. If this was unsatisfactory last year, can draughts be eliminated or more powerful radiators fitted? Nothing is more miserable and conducive to minor ailments than working in a warm atmosphere and then sitting down to eat in a cold canteen.

Winter comfort. Is there sufficient accommodation for coats if the canteen is away from the main buildings? Could bright curtains and gay paintwork help to make people feel warm, despite the grey-ness outside?

Hot meals. Lastly, check dishing-up, plating and serving times, to make sure that all food is piping hot from the first service to the last.

Talking Points

Crimson or Pastel?

A STRIKING colour scheme in a North of England canteen includes a bright crimson panel round the serving area. Red, the psychologists tell us, rouses anger and passion. It would be interesting to know whether the customers of this canteen are worse-tempered and more difficult to please than they would be if the counter were surrounded with a pastel shade!

Apart from psychological considerations, however, a pastel shade "sets off" the colours of the food more effectively.

Hints on Notices

MOST canteens have one or more notice boards—and very dingy, uninspiring objects they are in many cases.

A notice board should be brightly painted and clean. It should bear only clearly typed notices which are removed as soon as they lose their topicality. It should be mounted at a sensible height and in a good light.

And it should not be placed in a position where it could cause a bottleneck if, by any chance, the canteen customers stop to inspect it!

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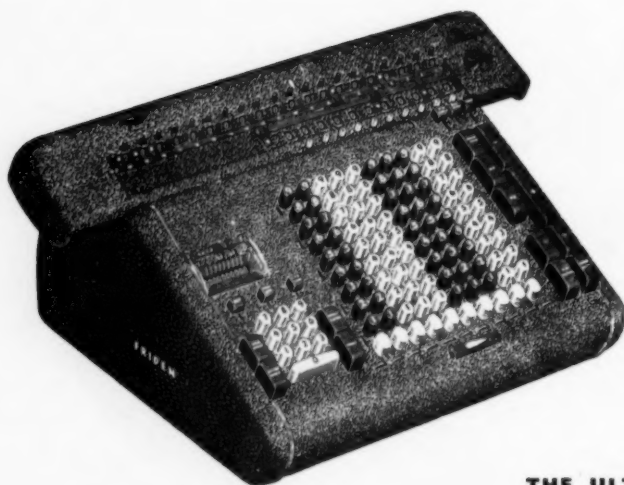
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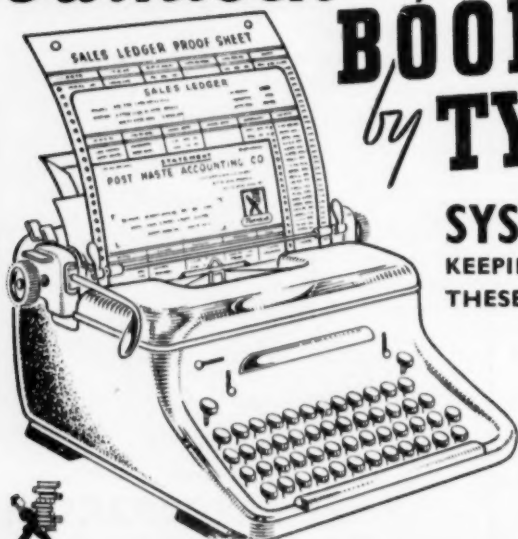
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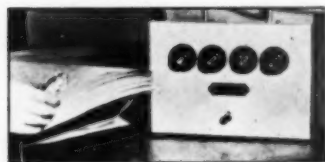
● Office . . 99 ● Industrial . . 107 ● Welfare . . 114 ● Canteen . . 116

FOR YOUR OFFICE

Paper Counter

LARGE numbers of sheets of paper, card, etc., can be counted at very high speed with a portable electronic instrument. The equipment is in two units: a stylo head which is drawn steadily across the turned-back corners of the paper stack to be counted; and the electronic counting unit, which carries the recording dials. These show running and cumulative totals; their capacity on the standard model is 10,000. A re-set button returns the dials to zero for the next count.

Plugging the unit into an ordinary single phase main is all that is necessary for counting to begin. No ancillary equipment is needed and, since the consumption of the equipment is only 60 watts, it can



Faster than sight

be run from a light socket. The electronic mechanism can count at rates up to 2,000 per second but these speeds would hardly be attainable in practice.

Enquiry Ref. No. 0.10/1.

Speed with Security

CLAIMED to be much faster in operation than a keywound binder, the new *Model S* will nevertheless give proper security and protection to records. The mechanism is said to be as easy to operate as a light switch and is so designed that every time the



Opens flat on a "rolling hinge"

binder is closed the records are automatically held at the correct tension. It is therefore impossible to strain the mechanism.

Another feature of the *Model S* is the "rolling hinge" which ensures that the opened binder lies completely flat on the desk and provides a good writing surface. Broad detachable bars run down the back of the book and can be used for engraving the title of the record. These can be supplied in five distinctive colours and can be changed readily.

Special rubber-and-plastic composition material is used for the moulded covers, the rubber-cushioned edges of which will not mark or scratch desk tops. The cover, mechanism and thongs of each binder carry an unconditional guarantee covering the first seven years of their life.

Enquiry Ref. No. 0.10/2.

Camera and Projector

COMBINED in the *Microfilmer* desk unit is a camera for photographing documents on 16 mm. safety film and a projector which enables the microfilm image

to be thrown on a screen for reading-back.

Even junior staff, it is claimed, can operate the simple controls of the equipment. The camera is worked by two push-buttons and since the operator is required to use both hands for each exposure there is little danger that part of the document will be obscured on the copying table. Waste of film is avoided because only sufficient film to photograph the document in hand is advanced by a guide bar that works in conjunction with the camera mechanism.

Loose-leaf documents up to 12in. by 14in. can be copied, as well as small bound volumes. An interesting point is that the equipment is so designed that it can be used with an adding machine, thus permitting the simultaneous microfilming and listing of cheques and similar documents.

An output of 1,500 items an hour is stated to be within the capacity of even average operators; safety devices in the machine guard against incorrect operation.

When the equipment is to be used for viewing, a screen is lowered into position over the



One machine but two functions

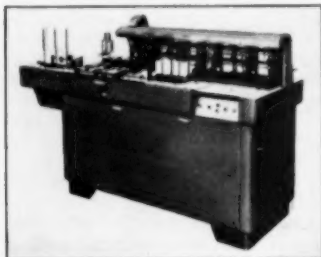
Business EQUIPMENT SURVEY

area previously used as the copying table. A handle at the side is used for advancing and positioning the film and the projected image is a 24-times enlargement of the film frame. Up to 100ft. of processed film can be accommodated in the projector head. Dimensions of the equipment are: 36in. high by 20in. wide by 22in. deep.

Enquiry Ref. No. 0.10/3.

Automatic Mailer

MADE in the United States but shortly to become available in the British Isles is a range of



Gathers, inserts, seals and franks

machines that perform automatically the whole range of mailing operations. Enclosures are gathered, inserted in an envelope, the flap is sealed, the envelopes are franked and then counted and stacked.

Designed for use by large stores, banks, direct mail firms and other people who have to handle a large quantity of outgoing mail, the machines can work at rates as high as 3,500 to 4,500 pieces per hour. Errors, it is claimed, are impossible because of the highly sensitive detectors that stop the machine if, for instance, two inserts should feed. When the machine stops, location of the error is indicated by a light which shows until the fault is corrected. Because of their accuracy, the machines can be used for handling cheques, tax statements and similar documents.

Up to six enclosures of different sizes and shapes can be inserted together and large pieces measuring up to 8½ by 11in. can be inserted in 9 by 12in. envelopes. The push-button controls allow the machines to be operated by one man—a vast saving of labour over

any other method of doing the jobs concerned.

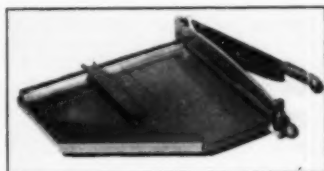
Machines are enclosed in a streamlined casing that enhances their appearance, cuts down motor noise and excludes dirt.

Enquiry Ref. No. 0.10/4.

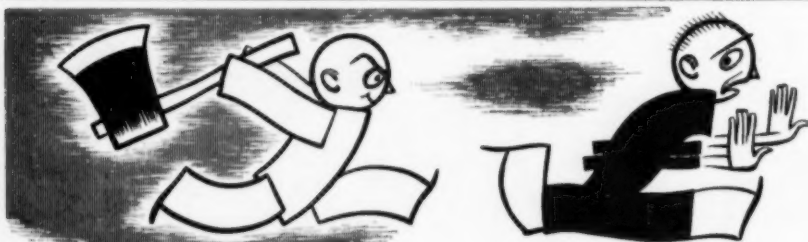
Well-designed Trimmer

SOME thoughtful design work has gone into a new paper trimmer that has recently become available. The device will take paper up to double foolscap size and will trim up to 14in.

The solid all-metal base is cut away at the corner farthest from the blade so that the paper can be placed on, and removed from, the cutting table with ease. Along the top edge runs a precision-engraved



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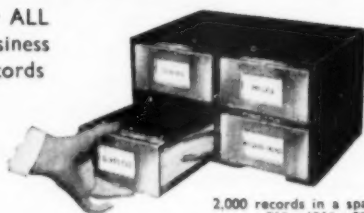


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graduated gauge. An adjustable back stop for the paper moves along this and is clamped in position by a thumb screw.

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Enquiry Ref. No. 0.10/5.

Almost Ten Million

CAPACITY of a new Swedish adding-listing machine, recently introduced to this country by the sole British agents, is 1d. short of £10,000,000. One of the *Odhner* range, the machine has been specifically designed for this market and works in units of sterling instead of decimals.

Power is supplied by an electric motor and the abbreviated keyboard is fitted with plastic keys shaped to fit the fingers. There is a visual indication of the amount entered on the keyboard and totals, etc., are also printed on the tally roll.

Claimed to be fast and adaptable, the *Odhner* is enclosed in a pleasantly-styled case finished in



Swedish made for sterling users

grey crackle enamel. It is fitted with rubber feet to prevent damage to polished desk tops and tables.

Enquiry Ref. No. 0.10/6.

Better Layouts

USEFUL aids for the typist doing display or layout work are the *Greenford* typewriting layout pads. These consist of 50 sheets of either quarto or foolscap size with a scaled pica or elite grid printed on each sheet.

The pads are particularly useful for laying out copy before cutting duplicating stencils or preparing offset litho masters. Special bond

paper has been selected that is suitable for either typing or hand-writing and the sheets are secured by a plastic glue that enables them to be removed from the pad with a clean-cut edge, free from glue.

Pads are also available with blank sheets for use with a backing sheet which has the grids (pica and elite) printed on either side of it. These can be used for "casting off" copy which is typed on the blank sheets and then placed over the grid so that the number of letters, including spaces, can be calculated quickly.

Another use for the pads is ruling-up columnar and tabular matter.

Enquiry Ref. No. 0.10/7.

Flexible Gummer

ADVANTAGES claimed for the new *Spot* gum spreader are that it is unbreakable, can be refilled and will not clog. It is made of *Polythene*, a flexible plastic, and the flow of gum is controlled by slight pressure on the sides.

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spreader is therefore economical in use and waste is avoided. Closure is effected by a screw-on plastic cap.

Enquiry Ref. No. 0.10/8.

Healthier Air

AS well as increasing comfort, the Aarcon office air-conditioning unit has, according to its manufacturers, another great advantage. It plays an important

part in the prevention of respiratory diseases and allergic conditions such as hay fever by removing pollen, carbonaceous dusts, etc., from the atmosphere.

It is designed as a window unit, occupies little space and is unobtrusive in appearance. Air is drawn into the room, is cooled and filtered and excess moisture removed; at the same time, the stale air, tobacco fumes, etc., are extracted. The Aarcon can operate as a ventilating unit or as a full air-conditioning unit, as required. It is quiet in operation and also keeps the office quieter, for it makes unnecessary the opening of windows and doors for ventilating purposes.

Power is supplied by a $\frac{1}{2}$ -h.p.



More than a mere luxury

electric motor. The capacity is up to 6,100 B.T.U's per hour. The room portion has a stove enamel finish, but that part of the unit which is exposed to the air is suitably treated to prevent corrosion.

Dimensions of the machine are 25 $\frac{1}{2}$ in. wide by 13 $\frac{1}{2}$ in. high. It projects 11 $\frac{1}{2}$ in. into the room.

Enquiry Ref. No. 0.10/9.

Build-up Trays

PRINCIPAL feature of the Uni-Stak letter tray is that it can be used singly or built up in tiers without the need for any fittings. Made of pressed and welded steel, the tray has flanges on its lower edges that allow it to rest on the top of the tray underneath.

Three of the sides are vertical but the front slopes forward, leaving a gap between each tray through which papers may be deposited or withdrawn.

Latest models of the tray are fitted with card holders on either side. Large enough to accommodate foolscap sheets, the trays are finished in sheen-green.

Enquiry Ref. No. 0.10/10.

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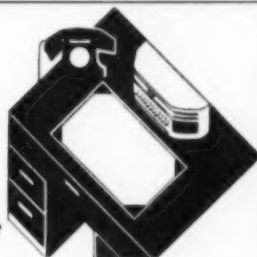
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MACHINERY

Safer Floors

IMPACTED grease, dirt and other deposits on factory, garage and workshop floors are dangerous and unsightly, but their removal by hand methods is difficult and slow. The Diron power floor scraper allows these deposits to be removed easily without the use of detergents or steam. The machine is claimed to do the work at least four times as fast as it can be done by any other method.

Deposits are removed in a dry state by a powerful brush with bristles made of ploughshare steel. The whole weight of the machine is loaded on this brush, giving a controlled but extremely powerful scraping action. Once removed, the deposits can be picked up by vacuum cleaner or with an ordinary brush.

Because of its small overall height and size, the scraper can be used in crowded machine-shops



Dry cleans factory floors

during working hours without interrupting production. It is operated by one man and a simple brush change converts it for use as a scrubber and polisher.

Enquiry Ref. No. F.10/1.

PROCESS EQUIPMENT

Sorts Things Out

CLASSIFICATION and grading of mineral ores, sands, clays and the separation of waste materials, slurries, etc., into their

constituent parts can be carried out by the Holman vibratory classifier.

Power from a 2 h.p. electric motor is applied through vee belts and a vibratory head to three ramps. Material is fed from a distributor hopper on to the first



Oversize comes out at the front; sifted matter at the sides

ramp, the vibrating motion of which causes the coarse material to move forward and the fine to move backwards. The fine material drops to a second ramp where it is again sub-divided, whilst the same thing happens to the coarse material which falls from the front of the first ramp. When gravels and similar materials are being treated, a screen can be fitted under the feed hopper which removes oversize material and discharges it at the front of the machine.

Between 2½ and 2½ tons of china clay can be handled per hour by the standard machine; other capacities can be obtained by varying the width of the ramps, etc. It is claimed that the classifier, when used in conjunction with other ore treatment plants, produces a very uniform size of material and, as a result, a high grade of concentrate is obtained on the concentrating tables.

Enquiry Ref. No. F.10/2.

HEATING EQUIPMENT

Heating Efficiency

WINTER is coming and with it the need for conservation of fuel resources. One device that has a contribution to make in this direction is the A1 space heater for factories and workshops. It has an efficiency rating of 88 per cent., which means that less than 12 per cent. of heat is lost up the flue—stated to be the minimum

possible loss consistent with a good draught. Fuel consumption at full load is from 8 to 10lb. per hour and the heater will burn anthracite, coal, coke or any other type of solid fuel. A single fuelling will last 15 hours for overnight burning.

Heating capacity of the stove is 40,000 to 50,000 cubic feet (100,000 to 120,000 B.Th.U.s). Construction is of cast iron with firebrick lining, and a new system of heat transfer from the fire to the surrounding casing is employed. Two doors are fitted, one for fuelling and the other for ashing. The flue nozzle issues vertically from the top and is suitable for connection to 5in. cast-iron pipe.

Dimensions of the A1 are 60in. high, 18½in. wide and 18½in. deep overall. It weighs 7cwt. 2qtrs. 12lb.

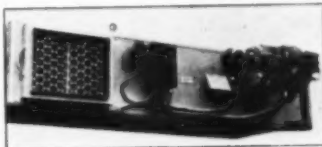
Enquiry Ref. No. F.10/3.

Warmer Workers

USING oil as its fuel, a new space heater can be installed either as a unit or joined to a duct-work system connected to several small rooms or offices. Of the horizontal type, the heater has a single-stage pump which is capable of lifting oil 10 to 15ft. from the tank and drawing it horizontally for 40 to 50ft. The tank may therefore be sited at some convenient point away from the heater.

Although designed for suspension, the heaters can be placed in any position—above the ceiling, below the floor, or in a convenient corner.

Drive from the motor can be varied to give different air outputs



Rear view of the oil heater showing filters on the left

or to overcome duct resistance. The fan is of the multivane centrifugal type and is quiet-running. Inlet to the fan compartment can be in any one of five positions, so that the return air duct can be fitted easily; the unit may also be used for introducing air from outside sources.

Burning takes place in a stainless steel chamber and the heat exchanger is of heavy gauge welded steel. Control of the burner is by means of a master panel which brings on the ignition and the motor in the correct sequence and provides a safety

Business EQUIPMENT SURVEY

control in case of burner failure. Fibre-glass filters are fitted in frames that can be removed easily for maintenance.

Enquiry Ref. No. F.10/4.

GENERAL EQUIPMENT

See Your Work

IDEAL for all assembly work which involves small components, the Visipart unit consists of a series of transparent trays ranged around a pair of supporting aluminium pillars. Components



Components are selected by sight

can thus be selected by sight and searching is eliminated. There is a total of 20 trays and each one is divided by a removable transparent partition, so that altogether there are 40 different compartments. Trays can be "fanned" in any desired direction and the components stored in sequence—thus saving much time on assembly work. Space occupied is small; the dimensions of the unit are 9½ in. by 6½ in. by 15 in. high. Although light in weight (4½ lb.), the assembly is quite stable and is fitted with a wooden base. Trays are washable and can be removed easily for this purpose or to allow their sequence to be altered.

Enquiry Ref. No. F.10/5.

Flexible Doors

ELiMINATION of damage to vehicles, loads, workers—and doors themselves—is claimed to result from the use of a new type of rubber door. Made of panels of canvas-reinforced rubber sheeting fixed to a tubular steel frame, the doors are so flexible that vehicles, etc., may be driven straight through them when they are closed.

The doors are of the swing type and can be supplied with one or



Through the rubber doors goes a truck—nothing is damaged

two panels, to swing in one direction or in both. The vertical tubular member to which the panel is bolted is pivoted at the top and bottom and fits close to the door frame. Totally enclosed in this tube is the patented return spring.

Standard thickness of the panels is ½ in. and the rubber facings are very tough and hard-wearing. Let into each panel is a rectangular Perspex observation window. This is set at an angle, in such a way as to allow people of different heights to see through easily. The windows are so



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placed that they do not distort the rubber panelling when the doors are flexed.

In addition to preventing damage, the doors save time because they need not be opened or closed. Since they can be fitted where other doors would be impracticable, they help to reduce noise and draughts.

Enquiry Ref. No. F.10/6.

Replaces Grease

SOME remarkable claims are made for a new lubricant, MCL, that can be used instead of grease on bearings of all kinds. It flows so freely that it is transferred from the barrel to lubricator or grease gun by a tap. Despite this low viscosity it will not ooze away or be squeezed out of bearings, neither will it channel or furrow. It forms a strong protective film over the lubricated parts which remains unbroken even under heavy "hammering" from worn bearings. Age, exposure or the severest working conditions will not cause it to harden or clog and, since the lubricant completely waterproofs the bearing, rust and corrosion are ruled out.

Not only does MCL lubricate more efficiently but also, according to the manufacturers, it lasts far

longer than grease—and is less expensive to buy per unit. Any bearing which has a nipple can be lubricated with it and, because it is so easy to handle and apply, much waste is eliminated.

Enquiry Ref. No. F.10/7.

GAUGES & TOOLS

Long Arm

USEFUL in stores, warehouses, retail shops, offices and many other establishments is the Cee-Vee Reacher. It is designed for handling a variety of articles from screws to big tins, bottles, cartons, etc. At one end of a tubular steel arm are gripping jaws and at the other is a handle for manipulating them. The jaws are set at an angle to the handle and the head can be rotated and preset. These features allow the tool to be used to get at articles on high shelves and in awkward positions which would otherwise be inaccessible without a ladder. A variety of jaw designs is available to suit different articles and the tool can be supplied in lengths ranging from 3ft. 6in. to 7ft. Light in weight, easy and safe to use, inexpensive yet precision made, the Reacher is a useful investment



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Enquiry Ref. No. F.10/8.

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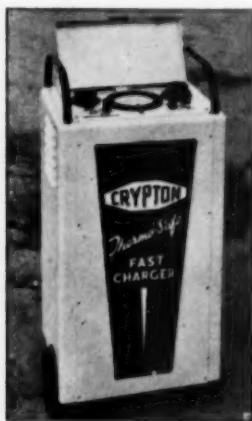
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running transport, battery-driven mechanical handling equipment, etc. Safety is not sacrificed to speed, however, for the equipment incorporates a thermostatic control that cuts out the charging current as soon as the battery reaches the maximum permitted temperature.

Batteries can thus be charged with complete safety in 30 to 60 minutes.



Charger and tester in one unit

In addition, the equipment can be used for slow charging of as many as five 6-volt or 12-volt batteries simultaneously. Built into the charger is an analyzing unit which makes it possible to determine the exact condition of batteries before and after charging.

The equipment is mounted in a cleanly-designed cabinet fitted with wheels for moving it from vehicle to vehicle. One great advantage of the Thermo-Safe is that it is self-contained and provides a complete testing and fast or slow charging service.

Enquiry Ref. No. F.10/9.

MECHANICAL HANDLING

Always Handy

EASIER handling of components and less operator fatigue are two of the advantages claimed for the Heightmaster device. Intended for use alongside production machines, it keeps components, parts, tools, etc., at a constant height from the floor. Stooping and lifting by the operator are eliminated and idle machine time reduced.

The device has a pair of forks that can be adjusted laterally to



Eliminates stooping and lifting

take different sizes and types of pallet, stillage, etc.

Electric mains power is used, and operation can be by integral or remote push buttons, or the device can be arranged to adjust itself automatically.

The mechanism is simple and robust, little maintenance is required and running costs are negligible. Three models are available with capacities of 1,000, 2,240 and 5,000lb.

Enquiry Ref. No. F.10/10.



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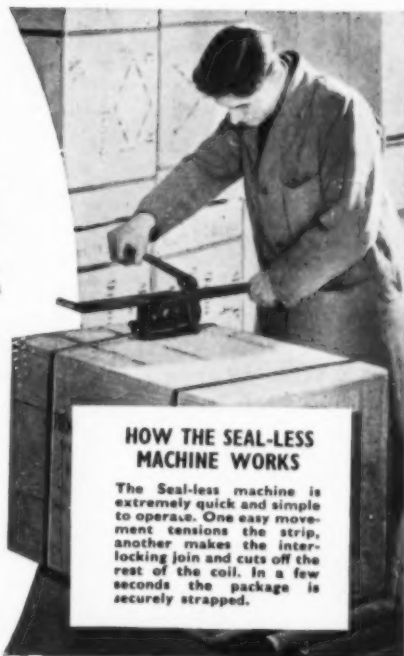
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FIRST consideration in designing a chuck guard is obviously to provide the best possible protection for the operator's hands. But the guard is unlikely to be



used conscientiously unless it also allows unrestricted vision and easy access to the chuck itself.

The designers of the *Pacera* guard, as the illustration shows, have effectively combined these requirements.

Easily attached, the guard is available in six sizes, to fit quills varying in diameter from 2.375 to 3.125in.

Enquiry Ref. No. W.10/2.

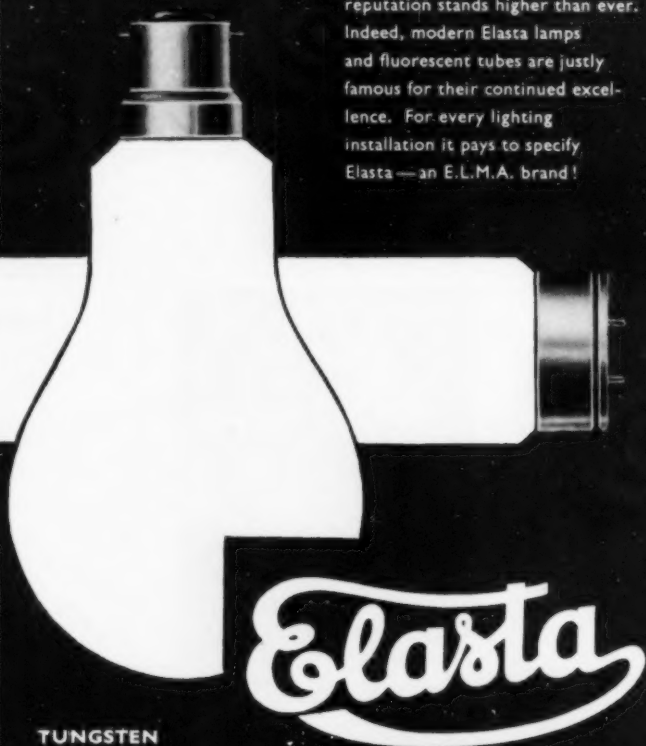
Tough—But Smart

NEW addition to one manufacturer's range of safety footwear is a heavy-duty Gibson-pattern brogue with tan Scotch grain upper. The sole is riveted, screwed and stitched with acid-resisting *Terylene* thread, and a rubber top-piece heel is fitted. Although tough, the brogue has a smart appearance.

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Among the pioneer brands of metal filament lamps, Elasta rapidly earned a reputation for reliability and efficiency. Today, after nearly 50 years' lamp-making experience that reputation stands higher than ever. Indeed, modern Elasta lamps and fluorescent tubes are justly famous for their continued excellence. For every lighting installation it pays to specify Elasta — an E.L.M.A. brand!



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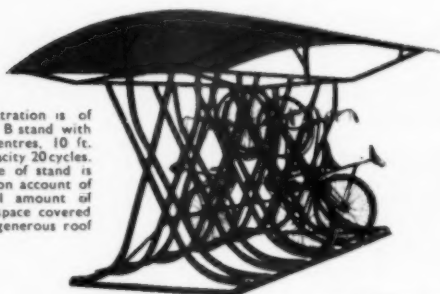
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ABIX

CYCLE STANDS

The Home of the British Cycle

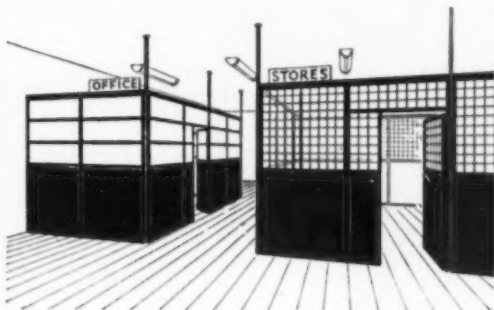
Abix Cycle Stands are constructed of steel throughout, stove enamelled green. Roof sheeting is normally of galvanised corrugated sheet steel. If required, sheeting can be supplied in Aluminium, Asbestos or Robertson Protected Metal.



The illustration is of our type B stand with 12 in. centres, 10 ft. long, capacity 20 cycles. This type of stand is popular on account of the small amount of ground space covered and the generous roof cover.

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Abix steel partitions are light, strong and fire resisting. Suitable for office or factory, they can be erected by comparatively unskilled labour. Catalogue on request.



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- ★ Highest quality precision construction.



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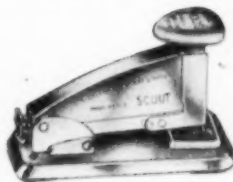
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Ideal for office and factory use. Can be used as a tacker. Loads strips 105 No. 200 Scout Staples.

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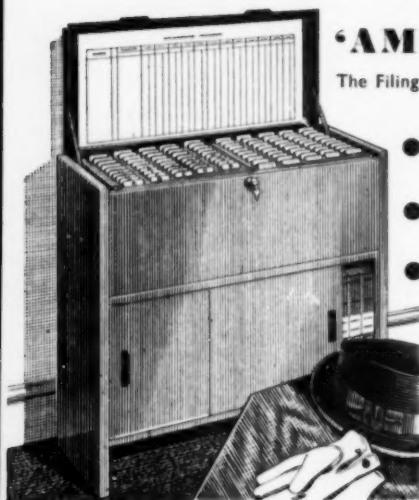
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Business EQUIPMENT SURVEY

CANTEEN EQUIPMENT

Hot Water Quickly

OUTPUT of the new Minor gas-heated boiler makes it particularly suitable for tea-making in small canteens and messrooms. Starting with water at normal tap temperature (about 50 deg. F.), it produces boiling water five



minutes after lighting, and is capable of delivering 122 pints an hour at boiling point.

Intermittent output is two pints in 20 seconds at 40-second intervals, while the maximum quantity obtainable in one minute is four pints.

Enquiry Ref. No. C10/1.

Safe Washing-Up

AN obvious danger in works canteens is that imperfectly washed dishes and cutlery can quickly spread infection. One way of ensuring that the job is done properly is to install a combined sink unit which provides facilities for both washing and sterilizing.

After being washed normally, the utensils are placed in special baskets and immersed in a separate sterilizing bowl which incorporates a thermostatically-controlled 4-kW. Santon sterilizing heater. Finally, they are taken out and allowed to dry by their own heat.

The two bowls are adjacent and measure 24in. by 20in., the washing bowl being 12in. deep and the sterilizer 17in. deep. In the latter, a removable perforated cover-plate protects the element and thermostat, while an automatic cut-off prevents damage to the element should the sink run dry.

Constructed throughout of stainless steel, the unit has a drainer at each end, a 4in splashback, and an apron shield.

Enquiry Ref. No. C10/2.

BUSINESS

HOME DESIGN

Continued from page 73

equipped building. In view of the scarcity of timber, it was decided to use a patented slotted metal angle for the construction of the storage racks and packing benches.

The stock bays are arranged in rows and each product has its own compartment, which is clearly labelled. The racks for the bulky items have mesh sides. Handling is by means of special trolleys—also built of slotted angle—and wide passages between the rows provide convenient access to any point of the storage racks.

Components entering the finishing and assembly shop are fed to girls on the assembly benches, between whom are baskets of large capacity, mounted on wooden skids to facilitate handling, in which the completed toys are placed. The baskets of toys are transported to the packing and dispatch departments in Purley, and the contents are stacked in their appropriate compartment in the stores.

Packing Details

Each packing bench accommodates four girls. Like the assembly benches, these are constructed of slotted angle to the company's own design. At the end of each bench is mounted a standard roll of brown paper and two string holders, one on each side, the string being led to a small fixture within easy reach of the packers' hands. Hinged bins, which can be kept open or closed, contain scrap material for packing. Below the bench is a slide on which is mounted a roll of corrugated material.

Some home orders are dispatched in hampers, but the bulk of the output is packed in three standard sizes of cartons, depending on the grade. Corrugated fibre cartons with a corrugated liner are employed for export.

All cartons are sealed with gum strip and no strapping is used for the smaller sizes dispatched to customers at home. For export orders, steel strapping is employed, the carton being placed on a special bench to facilitate the strapping operation. The empty cartons can also be stood on similar benches during packing, if the girls prefer.

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Considerable time can be saved, and much noise and dislocation avoided, by modern methods of partition construction. The systems we employ include the installation of prefabricated units. These are quickly assembled, perfectly rigid when erected, yet easily dismantled for storage or re-erection in other positions if desired.

Alternatively, we shall be pleased to undertake PERMANENT INSTALLATIONS, panelled in a wide variety of sheet materials, veneers, plastics, etc.

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To interested enquirers will be sent with pleasure quotations, and any further information desired, together with a list of important conferences held in recent months at this Hotel. Appreciative comments were received thereafter, without exception, from the chief executives concerned.

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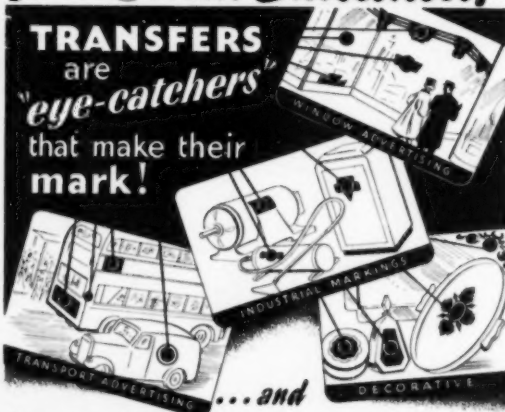
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SHORT CUTS

Continued from page 54

which are never likely to be looked at.

(b) Weeding files periodically.

(c) Moving out-of-date files to archives more promptly.

(d) Building filing units to the ceiling and putting the least used files at the top.

Ask Yourself Why

MORE and more firms are realizing that one of the best ways of increasing office efficiency is to get the staff interested in the subject and to encourage them to make suggestions which lead to improvements in working methods. A recent issue of *Dexion News*, published by Dexion, Ltd., manufacturers of the famous slotted-angle material, lists a number of points to stimulate thinking of this kind. Under the heading: "These are the kind of questions that are profitable," they encourage members of the staff to ask themselves why a job is done in a certain way. Under clerical questions are the following:

- 1—Why are these forms filed and kept? Who looks at them? How often? What would happen if we threw them away?
- 2—When a man receives a form, has he somewhere to put it? What use does he make of it?
- 3—Why do we have six copies? Where do they all go? Why?
- 4—Are pins, clips, pencils, etc., properly positioned for quick working?
- 5—Is a desk necessary, or could the work be done on a simple table?

Easier Book-keeping

THE Accorder system provides for brief details of goods and their invoice value to be recorded on a folded card in which a copy invoice is held until it is paid. Payments are not posted, but when a payment is made a cross is placed at the side of each item paid. A balance column provides for the recording of balances in those cases where the amount due is not cleared. Cycle balancing is used to eliminate peak periods, and paid invoices are not taken from the clerks' desks for filing until balances are proved.

OCTOBER, 1953

You'll be glad you

installed



fluorescent fittings

— specially suitable

for offices

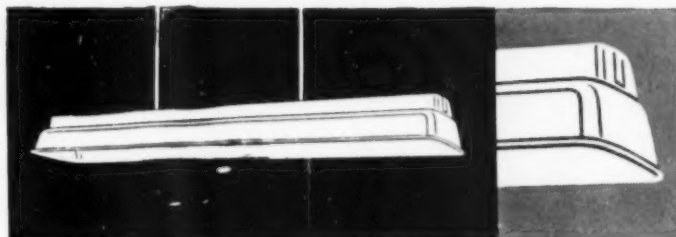
Don't miss these G.E.C. fittings for your fluorescent lighting. Every type has been designed with some particular job and its problems in mind. These models have been tested and proved by actual use on a very wide scale. Virtually every problem that can arise has been met, studied and answered.

Add highly competitive initial cost, low running cost, outstanding ease of installation and maintenance; you will understand why so many in every trade and profession praise G.E.C. fittings as the ideal answer to their fluorescent lighting problems.

For the best results always use Osram tubes.

**Economical to buy
and operate**

**Easiest to fit and
maintain**



Designed for efficiency

The reflector is made from translucent white opal Perspex. This gives a very agreeable low brightness external appearance and a well lit ceiling.

One-man maintenance

The assembly has been planned so that the parts of any installation can be de-

tached or replaced with ease by one man without an assistant.

Suspension

The top chassis containing the control gear may be suspended in three ways:

- (a) From conduit suspensions straight into the fitting at 24" centres
- (b) By conduit or chain at any suspension centres
- (c) By screwing direct to the ceiling

F62064 one light £12.5.0 F62066 two light £17.3.0 TUBES EXTRA

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The cabinet is stove enamelled in wrinkle finish. Each of the six drawers in smooth eggshell grey holds 25 stencils on separate frames preserved permanently in a transparent non-stick wrapper. Single drawer units available.

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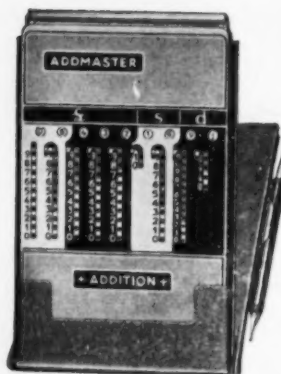
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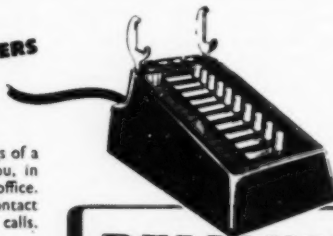
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